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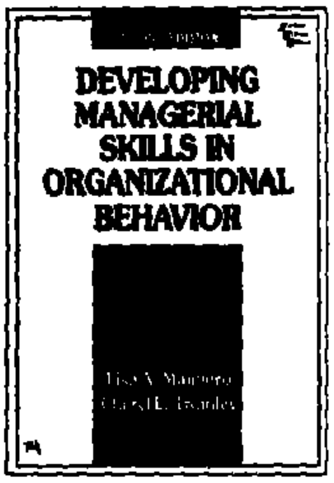

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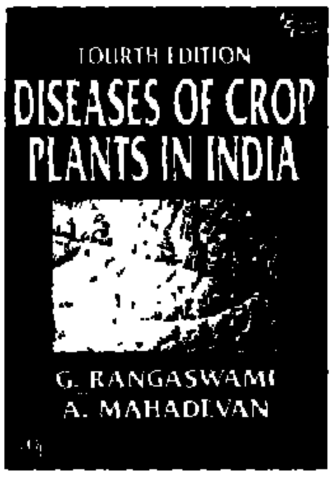

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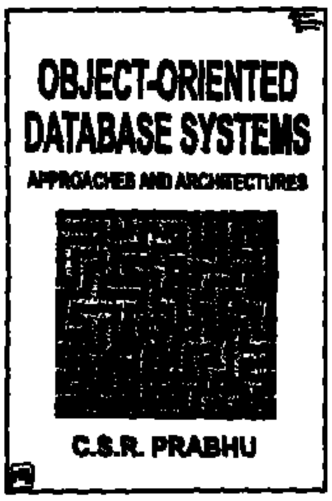
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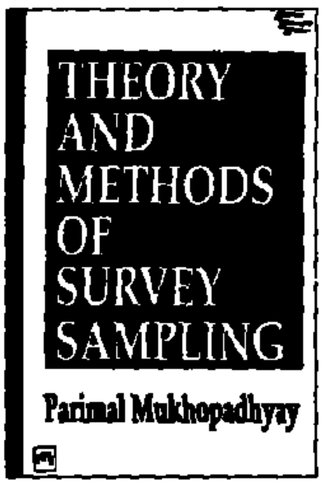

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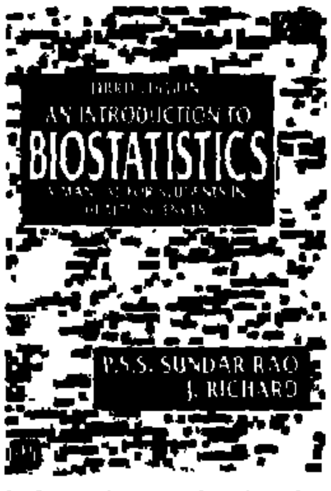

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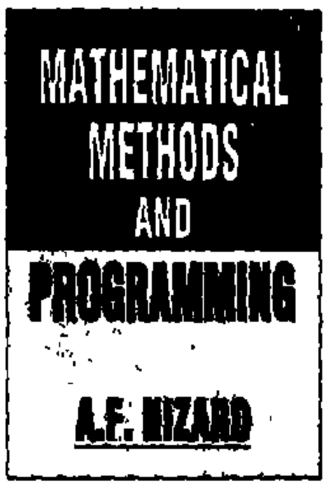

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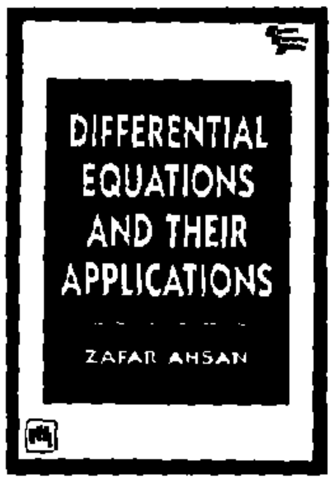

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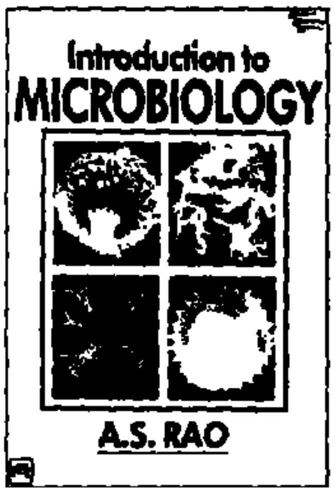

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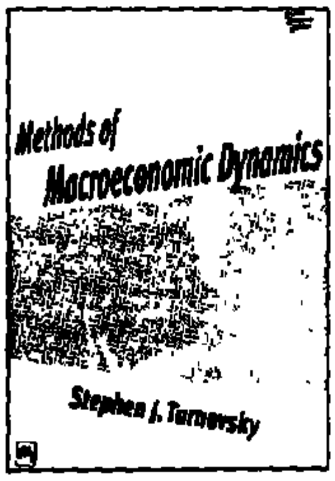

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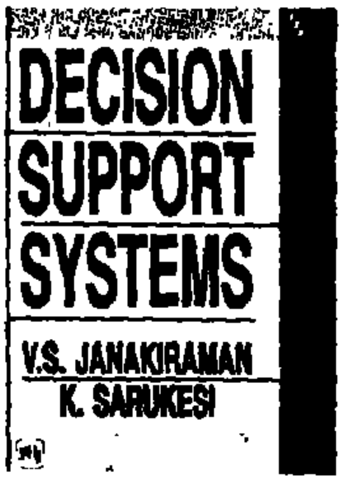

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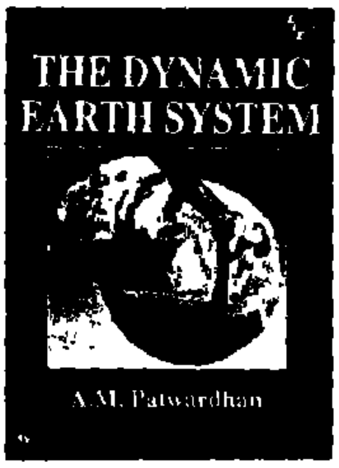

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Taxonomy of Educatedness

Marmar Mukhopadhyay*

Introduction

Several expressions like, 'illiterate but not uneducated' or 'qualified but not educated' raise fundamental questions — what is being educated? Is there a scale or a taxonomy by which educatedness can be qualified, may not be qualified? In this article, an effort has been made to examine this issue and propose a theoretical construct on taxonomy of educatedness.

Should educatedness be construed to be a forward movement of human nature, there is definite scope for reviewing the fundamentals of human nature — its potentials and propensities and the nature and purpose of education.

Nature of Human Being

There are several discernible sources where nature of human being can be derived from. Both idealistic and materialistic schools of philosophy and the philosophies propounded by the religious leaders of the east and the west. There are interesting points of convergence.

Humans, in Hindu tradition, have been described as child of God *(Amritasya Putraha)*. According to Islam, "Man is God's Viceroy on earth." "God is the soul of man, his eternal nature," said Sikhism. According to Christianity, "Man is God's workman on earth." It would be evident that, in all the religions, humans have been defined, in one way or other, as child or representative of God. Kahlil Gibran, in his famous poetic work *The Prophet* told the parents that "The child is *through* you" implying that the child is *from* God (emphasis added).

The major implication of accepting the proposition, human as child of God, is that every human has the potentiality of achieving immortality that is the attribute of God. Leonard Orr, in his interesting treatise, *Breaking the Death Habits*, argued that humans are basically immortal, but they develop a habit of dying. He refers to several Indian seers who have lived in the same body for more than 300 years. Eventually, he came across most of them in the Himalayas of India.

Carrying the argument further, each human is positioned on a continuum between animality and godliness, the two ends of the continuum. In sociological language, godliness can be seen as civility. The animality is indicated by the instinct and processes of acquisition (or acquisitiveness!) — instinct and habit of acquisition of material wealth and comfort. Indian scriptures also describe hunger, sleep, procreation, fear, anger etc as indicators of animality. Godliness, on the other hand, is indicated by distribution (or distributiveness!) — the behaviour of giving away for the benefit and happiness of others. The saints and seers are characterized by their nature of giving away all that they have — *"Tena Tyaktena Bhunjitha."* Crucifixion of Jesus or martyrdom of Guru Tegh Bahadur, the ninth Guru of the Sikh tradition, are some of the outstanding examples where life itself was given away for the benefit of others.

Let me quote a couplet from *'The Muse'* by NP Mukherjee to illus-

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trate this is in a more symbolic, yet philosophic form :

> *"When you see a thorn on path lies,*
> *Take it up, and a flower let there be;*
> *A thousand thorns you will have thus uprooted,*
> *The road with flowers strewn smiling stand."*

In reality, it is not difficult to pick up the thousand thorns and leave the road smiling with flowers. It is matter of value. The animality related behaviour will be indicated by picking up the flower and leaving the thorns, and civility or godliness is indicated by picking up the thorns despite the risks of being hurt. Acharya Vinoba Bhave's definition of *Prakriti* (nature), *Vikriti* (deformity) and *Sanskriti* (culture) are also indicative of behaviours on a continuum. Importantly, every human being has the potentiality to move from where he/she is towards the ultimate destination — Godliness. Shri Aurobindo's contention of movement towards the superman and supra-mental position with every birth also supports this hypothesis.

Should this proposition be conceded, nature of humans will be determined much more by the values rather than by the amount of information one has mastered. Wisdom that was the prerogative of the saints and seers of all religions is the information and knowledge tested out and purified on the fundamental values. Does this bring in a debate between wise and the knowledgeable? In the western tradition, knowledge has been the premium; eastern culture and tradition staked for wisdom. Carrying it further, humans are essentially a value configuration rather than knowledge configuration. Whether the scientific knowledge is applied in creating an atom bomb or a life-saving drug depends upon the value; knowledge is a mere instrumentality. The classic statement, 'war is in the minds of men' in UNESCO's Charter implies the same proposition.

Nature and Purpose of Education

From the paradigm on the nature of humans portrayed above, the purpose of education becomes comparatively clearer. It is to facilitate the movement of an individual from his/her relative position in the continuum from the animality end towards godliness end. Among the various definitions on the purpose of education, I suspect Swami Vivekananda's contention represents the best in this paradigm — "manifestation of the perfection already in man." That 'already in man' (humans) is the godliness, because only the God is perfect and complete.[1]

Indian literature is rich in defining and demonstrating the purpose of education — a tradition spanning over several millenniums. It, however, lost its moorings with a suicidal discontinuity in the colonial period, particularly since the Charter Act of 1813. Slowly and steadily, the western mechanics and machination of education took over and replaced the time-tested tradition of Indian education.

Four Pillars of Education : Interestingly, the world has taken a full circle. The International Commision on Education for the 21st Century appointed by UNESCO talked about four pillars of education, namely,

- Learning to Know,
- Learning to Do,
- Learning to Live Together, and
- Learning to Be.

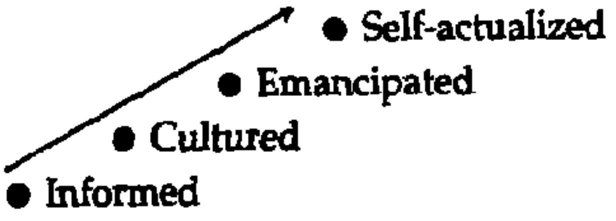
The four pillars of learning echoes the Indian philosophy of *Gyana Yoga*, *Karma Yoga*, and *Saha Yoga (Sahana Bhavatu, Sahana Bhunaktu)*, and *Atmanam Riddhi*, respectively. These are the four pillars of Indian life; in the international context, these are now seen as the four pillars of education. Since Delors' report is widely read, it may not be necessary to elaborate on the details of the four-pillar theory here.

But let us pursue this argument little further. There is an element of taxonomy in it.

- Knowing is the lowest and minimum basics to start with;
- What is done with the knowledge is the second level of importance.
- The third layer prepares humans to live together as a social being equipped with knowledge and competence of doing.
- But the ultimate is 'to be' — perfection already in man.

Taxonomy

Corroborating with this argument, individuals can be placed on taxonomy of educatedness.



Informed : The lowest in the hierarchy are the ones who are informed. An informed person may or may not be formally educated in a school. Hence a qualified person falls under this category, because qualification is based on achievement tests on organized form of information or knowledge. The difference between a qualified informed and non-qualified informed can be on the organization and structure of knowledge.

Cultured : The second level is the level of culturedness. Culture has metaphorically, been described as the light that emits out of a diamond, and not the diamond itself. In humans, culture represents an individual in his/her totality. Hence, it is much more than knowledge. It represents an integrated personality that is well rounded, that emits warmth and human values. It is manifested by the way an individual treats himself/herself, others, animals, places, objects, and the like. It is the totality of a 'person'. For example, a person who unhesitatingly litters a public place may be informed but not cultured. Acharya Vinoba Bhave's concept of Vikriti and Sanskriti[2] represents this concept very well.

Emancipation : One level ahead of culture is emancipation where individuals rise above the artificial boundaries of religion, caste, creed, gender, linguistic and geographic belonging, social mores, cultural traditions and forms, etc. For example, a male while being proud of being male shall have sense of equality with women and a sense of respect for the female. A Hindu can continue to practise Hindu religion but will have equal respect for Islam, Christianity, Sikhism and all religion of the world. Ramakrishna, famous Indian spiritual leader, actually practised more than one religious practice in his life before he pronounced that 'all roads lead to the same destination' *(jato mat tato path)*. Similarly, a person born in a particular linguistic group can be proud of his/her language and heritage with equal respect and appreciation for the national heritage and diversity of India. One can simultaneously be a proud Indian and member of the international community. This is basically achieving freedom from the strangle holds of ignorance, intolerance, etc. — *sa vidya ya vimuktaye* (that is education that liberates).

Self-actualization : The last and the final level is self-actualization where emphasis is on achieving the best of the potential from all possible sources and inheritance. In the western tradition, Maslow's Hierarchy of Needs places this at the top of the needs' hierarchy. Vivekananda's 'perfection already in man' is also an indicator towards the same direction. Delors' Commission echoed similar proposition when it mentioned that the humans live in physical, intellectual, emotional and spiritual planes. Self-actualization will imply achieving the best in all the four planes of life.

The purpose of education is to move an individual from the level of information to self-actualization. Super-imposing these stages with the earlier contention of the purpose of life as movement from animality to godliness, it construes that self-actualization at the top-end merges near around the godliness concept.

The construct can be checked against the Delors' paradigm of four pillars of education.

- Being *informed and cultured* is nearer the concepts of *learning to know and learning to do (not only how but what);*
- *Emancipation* in the social context is the key *to learning to live together;* and
- *Self-actualization* corresponds to the concept of *learning to be.*

This synthesis of understanding is important to minimize the artificiality of the dialectic contradictions.

Thus, purpose of education is much beyond studying history, economics, mathematics and the like. It is nurturing the seed of immortality already sown in every individual for facile movement from lowest level of being informed to the highest level of self-actualization. This would also imply that education is the process of developing the wholesomeness of the person where the central core is the values and perceptions, and information and knowledge provides the outer edge for reconstruction of values, and hence socio-spiritual resilience.

Added the time dimension to this proposition, there are two different implications. Firstly, it signifies movement from informed to self-actualized over time. Secondly, at every age there are connotations for all the four levels of the taxonomy. There will be paradigm shifts in being informed between a child and an adult, and at age. For example, drawing the argument from *The Power of Now* apparent consciousness of humans is unconsciousness for it does not allow the actual consciousness (rising above mind), is a knowledge and part of being informed. Similarly, the selfish behaviour of a two-year-old child is indication of culture at his/her age but not when he/she reaches the age of sharing. Understanding, tolerating and appreciating differences between practices in Hindu and Muslim marriage in a village where both the communities live together can be a case of emancipation even at early age. According to most schools of psychology, intelligence grows till about 18th year of life. One component of self-actualization will imply efforts to enhance intelligence through environmental interventions to exhaust the potentiality.

However, education has to become essentially life-long process because being informed, cultured, emancipated and self-actualized has to happen at every milestone of life. Self-actualization at youth is different from actualization at age.

Conclusion

How does one impart that kind of education? For, such education can be more by imbibing than by reading and listening. That brings us back to the Indian *Gurukula* system where each *Guru* was a live example for emulation by the disciples (this word describes better than the word student does). And, disciples lived with the *Gurus*, with the opportunity of seeing the *Guru* in all his/her facets of life — both living and scholarship.

Many Indians become nostalgic about reverting back to the *Gurukula* system. It is important to remember that as a system, *Gurukula* was selective — right to education was restricted to few. Ekalavya, the tribal boy was refused education by Guru Dronacharya; Guru Gautam who asked Satyakam to find out the *Gotra* (caste) from his mother before he could be admitted. The twentieth century has ushered in democracy in education and education has been seen as a matter of right; and the new millennium will abhor and discard with vengeance the concept of selective education. Hence challenge is to find methods of providing holistic education with requisite depth to all.

In practical terms, there are more than 154 million students in India and as many as 4.7 million teachers at all levels of education. Along with expansion of education there has been wide diversity in the nature and preparedness of the students[3]; there has also been wide diversity in the teacher quality — both in intellectual and non-intellectual domains. Can we even dream of having 4.7 million Guru Gautam Today?

However, there are great teachers today too, obviously few. Take the case of Prof. Amartya Sen for economics, Prof. Alex Romizowaski for educational technology. Can they be taken to teach the millions? New communication technology that creates virtual classrooms on a wide scale is potential to fill in the gaps. Alex or Sen can be accessed through Internet. New methods have to be discovered and deployed should we look for world as a community of educated people in true sense of the term.

Notes

1. "Om Poornamadah poornamidam, poornat, poornamudachyate Poornasya, poornamadaya poornamevaavashisyate" — *Upanishad*
   "That (the Absolute self) is full; This (the world we experience through our mind and senses) is full. If This fullness is taken away from That fullness, what remains is full." (English Rendering by Swami Jyotirmayananda).
2. Acharya exemplifies that when a person eats when hungry, that is prakriti — nature; when he/she eats despite full and not hungry, that is vikriti —, and when a person, despite hunger gives away his/her own food to another hungry person, that is sanskriti — culture.
3. Delors Commission puts it beautifully when it contends 'the world has come to the classroom'. Obviously it brings with it the hunger, poverty, violence and all that a society has. ❑

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An Inquiry in the B.Ed. Programs of the Indian Universities

Face to Face Vis-A-Vis Distant Modes-II

R.P. Singh*
Gopal Rana**

Questioning the assumptions regarding teacher training

While summing up the theoretical frame it has been pointed out that teacher training is a highly complex job and the understanding of all that is involved in this process or product is not easy to fathom.

The emphasis has been deliberate on teacher qualities and the skills involved. The assumption that teacher's colleges understand their jobs full is definitely wide off the mark. The assumption is that before teachers were trained good teaching or good teachers did not exist. Also, that teacher training has found favour with everyone or the controversies surrounding the process or the products have no challenges or there is a possibility that an ideal teacher training college is a possibility etc.

Hypotheses

But what is being asserted is that there is no difference in teacher preparation programmes be they through one mode or the other. No matter how one receives the training the job requires only a license to teach because the market does not grade the quality of a teacher in terms of mode. It is akin to acquiring a driving license before one comes on the road with a vehicle. What is checked is not the mode how one got it because there is no way to check the fake from the real except the hope that accidents will not occur in the case of license holders.

In teaching, however, there are many more expectations including the one which relates to values, morality or ethics. The hope does not exhaust itself with a mere inadequacy of teaching because involved here are numerous possibilities and levels of societal problems.

A teacher does not merely teach in a classroom, he helps society during public elections, distributing medicines, computing census figures, family planning propaganda, teaching human rights and pollution problems etc. One wonders whether these complex jobs are also ever analysed and training in them formally offered. What is being stated unambiguously is that we have hardly any research which has analysed the teachers job and rarely does one come across any effort on the part of the curriculum makers to provide for the training in these requirements.

A series of studies were conducted to find out the reality regarding the curriculum being offered and the possible expectations from teachers being fulfilled.

What follows now is an effort to evaluate products of the system?

Product Evaluation

(i) Sample 1 — The Institutions

We have here two studies which have prepared profiles of two better class teacher's colleges — one in Varanasi and the other at Agra.

It is quite interesting to appreciate the characteristics of a "good" college. What does that 'goodness' constitute? Professor Uma Varshney of BHU Faculty of Education made an in-depth study of a teacher's College at Rajghat, Varanasi originally started by J. Krishnamurthy Foundation for New Education — a successor of Mrs. Annie Besant, nowadays known as Vasanta College for Women, a constituent part of BHU. The study revealed that this College like any other in India offers theory and practice in its B.Ed. programme. There are 5 theory papers and actual practice teaching is offered in two school subjects. The B.Ed. session is also started in July-August and continues for about 9 months. One thing striking about this College is that while BHU is one of the most politicized and disturbed campus universities in India, this College continues with its work without any interruption whatsoever. The researcher regards this as a distinctly superior or good attribute of the College. She does not regard the other two important phenomena as of any consequence. For example, Girls Colleges do not appear to be as dis-

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turbed as the boys colleges. Secondly, the campus of the College is located at a distance of 10 miles from BHU campus. And thirdly, the college has a spiritual orientation and an aura of serenity about it. Perhaps these features and facts were not considered by Uma Varshney as contributory factors to a better class academic climate.

For the researcher the 'goodness' of the college could be identified with the examination results which were always cent per cent.

The other profile was prepared by Dr. Lata Chandola of B.K.D. Girls College Agra, which has a B.Ed. department too. Like the Vasanta College this college too faces rare disruption of studies and the results are invariably good. But the researcher does not identify these two fit enough as marks of a 'better' class institution.

This study was based on teachers' and students' responses who were directly asked through a questionnaire the distinctive marks of the college.

The best feature regarded by the teachers was 'teaching' i.e. completing the course of study which in any case is no different from anywhere else. "The aspects stressed about 'teaching' were regularity, joint effort, good image, effort to maintain personal decorum and dignity."

The students (girls only) regarded 'teaching' and 'teacher's behaviour' as distinctive features of the college. Sincerity and teaching were the core of 'good' quality. Even strict control or discipline were also declared to be noticeable features. Attention given by teachers also found a mention.

What may be noted here is the fact that neither of the profiles cited above talked of the quality and content of the curriculum or its relevance in later professional career and life. We think this is an important point which may not be overlooked.

(ii) Sample 2 — The Trained Teachers

A case study was conducted by Professor B.S. Dagar of M.D. University, Rohtak in Haryana on the impact of pedagogy on practising teachers. This was the first study ever of 'product evaluation' of B.Ed. courses in Indian Universities. The assumption underlying the study was that if pedagogy is the core of a profession it must leave its imprint on the practising teachers. During the course of study of a B.Ed. programme the practising teachers must gain insight into the process of teaching learning. The researcher also defined the 'insight' which consisted of developing better understanding of children, better application and use of teaching devices, and developing innovative approaches in the classroom practices.

The study was conducted on the teachers of the best known institution of Rohtak city which has the highest preference rating for admissions. All the 48 teachers of the school were covered in the study and the study itself had 4 pointers in the preparation of profile which was based on the following questions.

1. Do you recall any paper that you studied in your B.Ed./JBT? If yes, please say so.
2. Which particular item(s) in that (those) paper(s) you can still recall?
3. Do you think training has had any impact on your behaviour/thinking/teaching etc.?
4. If asked to reframe the paper of your choice which item(s) would you like to add?

The data collected on the above stated pointers was thereafter presented in 3 tables e.g. gender-wise, question-wise and teacher-wise. Table 1 carries the responses of teachers on the papers recalled and the general impact of training (innovations); which in turn were presented in seven categories on the basis of actual classroom instruction.

The effectiveness or otherwise of a teachers training course should be evident from the above table. As we move from question number 1 to 4 there appears to be a complete reversal of Yes into No. Only 83 per cent of teachers recalled something of the training, but when asked to recall a little more specifically the percentage came down to 45.

On the question of impact 21 per cent though it had some impact. But in terms of hindsight they remembered nothing and no one even applied any practice/innovation even when they could recall it vaguely. Whatever principles of pedagogy are taught have thus been found completely irrelevant.

Though female teachers were found a little better than their male counterparts in terms of positive responses however numbered much less than what could be regarded as 'heartening' or even 'satisfactory'.

In the words of Professor Dagar, "This analysis is indicative of the total irrelevance and meaningfulness of teacher education programmes. The 'effective' teachers are 'effective' not because of their training but because of their competence in the subject they teach. After they got their 'license' of teaching and entered the so-called 'teaching profession', majority of them elected to forget what they had supposedly learnt at the time of pre-service teacher preparation. Point wise conclusions are as under :

1. Experience of teaching shows little impact of the pedagogy.

2. Pedagogy fails to develop any insights into the teaching-learning process.
3. Overall impact of pedagogy is very little.
4. With time it was difficult to recall the content of pedagogy taught."

The author has admitted to the inquiry limited number taken in the sample and therefore warns against accepting the conclusions as definitive.

(iii) Case Study No. 2 — The Trained Teachers

This study was undertaken by Dr. Kunwar R.P. Singh on a sample of 102 teachers in Delhi (out of which 2 responses were deleted randomly to reduce the sample to a round figure of 100).

The main purpose of study was to have a feel of what teachers think of their B.Ed. degrees which they had taken as a statutory requirement.

The methodology was interview in a very informal situation. The teachers were, to begin with, reminded of the new role they were likely to play in the 21st century. Afterwards various topics of B.Ed. syllabus were presented for their reaction regarding the extent to which they had contributed to their success as practising teachers. After recording their reactions and analysing the same, these have been presented area wise : a) Philosophy of Education; b) Psychology of Education; c) Educational Technology; and d) Student teaching/practice teaching.

Analysis of the data

1. *Philosophy of Education* — 95 teachers said that it was a waste of time reading it.
2. Teachers did not like the teaching of philosophy in terms of schools of thought.
3. *On Educational Psychology* certain topics like definition of psychology, its historical development etc were rated as futile.
4. Teachers wanted to learn about its application in the classroom situation.
5. *Educational Technology* was a valued subject area for a few but a small number regarded its advantages being outweighed by cost.
6. Although application based, its teaching was only theoretical in nature.
7. *Practice Teaching* was rated very high as the valued practice.
8. Student teaching missed out on developing proficiency in discharging certain necessary duties, such as, classroom management, discipline, guidance, evaluation, co-curricular activities etc.

This study like the previous one suffers from smallness of the sample, but it is definitely more specific about the deficiencies in the course of study and even very clear on the areas of total irrelevance.

Table 1 : Analysis of Total (Male/Female) responses experience wise and question wise

Actual Classroom instruction-in number of Years	*Q1.*		*Q2.*		*Q3.*		*Q4.*	
	Yes	*No*	*Yes*	*No*	*Yes*	*No*	*Yes*	*No*
1. Up to 5 Years	10 (74.4)	4 (29.6)	7 (50)	7 (50)	2 (16.67)	12 (83.33)	2 (16.66)	12 (83.33)
2. 5 — 10 Years	7 (100)	0	5 (71.43)	2 (29.57)	2 (29.57)	5 (71.43)	3 (42.86)	4 (57.14)
3. 10 — 15 Years	7 (100)	0	3 (42.88)	4 (57.14)	2 (29.57)	5 (71.43)	0	7 (100)
4. 15 — 20 Years	7 (100)	0	4 (57.14)	3 (42.86)	3 (42.86)	4 (57.14)	2 (29.57)	5 (71.43)
5. 20 — 25 Years	2 (66.7)	1 (33.3)	0	3 (100)	0	3 (100)	1 (33.3)	2 (66.7)
6. 25 — 30 Years	5 (62.5)	3 (39.5)	2 (93.33)	6 (96.77)	1 (12.5)	7 (87.5)	2 (33.3)	6 (67.7)
7. 30 Years and above	2 (100)	0	1 (50)	1 (50)	0	2 (100)	0	2 (100)
Total	40 (83.33)	8 (16.67)	22 (45.83)	26 (54.17)	10 (20.83)	38 (79.17)	10 (20.38)	38 (79.17)

(iv) Students' Perception

Students' perception of a five year course offered at Regional College of Education, Mysore (NCERT). The sample consisted of all 540 students of the College.

On Curriculum

The students (43.6% of the total; 52% M.Sc. (Ed.) and 95% M.Ed. students) thought the content of the curriculum was very deficient in giving and meaningful experience to them.

At least it was very inadequate to make them good/effective teachers and definitely not any 'model' teachers.

There was more emphasis on the cognitive domain and very little on the connative one.

In brief, the course of study was largely theoretical and therefore, ineffectual.

(v) On teaching of Philosophy of Education

Prof. R.P. Sharma, Department of Education, University of Delhi, Delhi, himself a teacher of philosophy of education says the following :

1. It is taught as 'an assortment of topics tagged together to be called Theory of Education/Principles of Education/Philosophy of Education."
2. Teachers of the subject are themselves not "ardent pursuers of this branch of knowledge."

From among 63 teachers of educational philosophy spread across several Indian universities "only one appeared to have a consistent philosophy of his own."

AUTHORS' OBSERVATIONS

Ranging from teacher competence to meaningful curricula it has been brought out clearly that the curriculum being offered meets nobody's requirements and the teachers' of teachers lack purpose and any depth of professional understanding.

These are damning studies worthy of notice by all concerned — educational planners, teachers of teachers, teachers selectors etc.

Having partially confirmed the opinion and the view of those who regard B. Ed. as mere Statutory requirement or no more than a license to earn a grade we come to the most significant part of the study which compares B.Ed. correspondence vis-a-vis formal face to face mode.

(vi) A Comparative study of the two modes — Face to Face and the correspondence modes

As is well-known the correspondence mode came under fire after having earned the disrepute for producing B.Ed. on a mass scale unheard of in the world. Interestingly enough no one bothered to learn about the reasons of its popularity and neither was any effort made to find out whether or not this course/mode was in any way worse off than the face to face.

The universities where the mass scale production of B.Eds. was undertaken numbered only two viz., M.D. University, Rohtak in Haryana and Annamalai University in Tamil Nadu. The other universities which were engaged in much hallowed face to face practices or mode, however, continued to demean the system on a quieter note than these two which were suddenly confronted with an adverse propaganda. What was not taken note of are the following facts :

1) The so-called better class universities continued to take a specified number of prospective B.Eds. until January of the academic year where examinations were offered in March. In most cases these new entrants never attended a single class and even if

Table 2 : The categories and number of teachers in each category

	0 to 5 yrs.	*6 to 15 Yrs.*	*16 to 25 yrs.*	*26 to over*	*Total*
1. B.A., B.Ed.	14	10	6	5	35
2. B.Com., B.Ed.	4	4	3	2	13
3. B.Sc., B.Ed.	5	7	5	3	20
4. M.A., B.Ed.	7	3	4	1	15
5. M.Com, B.Ed.	2	2	2	1	7
6. M.Sc., B.Ed.	5	3	1	1	10
Total	37	29	21	13	100

these student-teachers had the impudence of expecting a little bit of guidance or class instruction the non-availability of university teachers for teaching was and is a serious impediment.

Thus far universities have framed no code under which a teacher is obliged to teach to earn his salary.

Similarly, there is no law which prevents India's political leadership to nominate any candidate from obtaining a B.Ed. degree.

Also, where genuine degrees are not available India has the distinction of numerous fake universities too who survive only for helping out the needy for a consideration.

The state governments which have their own Teachers' Colleges are also under considerable pressure for 'out of turn' admissions and special favours to political nominees. Then to blame only private-run teachers' colleges alone is not justified.

All that we have started thus far is quite common but their brilliant exceptions too dot the subcontinent and teachers of exceptional merit with the highest moral standards are also neither in minority nor a great rarity.

2) The universities which did meet a kind of national requirement by mass producing B.Eds. were not overly guilty afterall. Technically, all universities in India are statutory institutions, therefore, under law all universities are equally autonomous and their degrees are also at par.

In this regard the mode is immaterial. The system being autonomous is free to elect any mode and fix the number of intake as well.

3) Thirdly, these universities were on the look out for making a little bit of money through legal means to supplement their income.

After all when the state governments themselves are guilty of poorly financing universities and opening universities which they cannot financially support what moral right do they have a question the mode universities employ to earn a penny on the quick and that too within law?

4) In a tight job market where getting a gainful employment is as difficult as to wish God to appear in person as and when his devotee so wishes, B.Ed. is the best license to earn a living. Therefore, means do not matter, the ends do. And if there is a responsive system available to oblige for a consideration, we see no reason why one should not opt for it.

5) One should not assume that even teaching jobs are available for the asking and salaries are paid either regularly or on the basis of approved scales.

There is an urgent need to undertake research in this area, but the data which occasionally trickles out in newspaper columns and the stories taking founds in certain circles are positively shocking and unworthy of any civilized nation. One cannot overlook the fact that states can do a lot in this regard. But when it comes to taking action Indian political leadership invariably favours the guilty and law-breakers.

Therefore, those who take a high moral ground to condemn the phenomenon of B.Ed. correspondence have very little to defend themselves with because in this the accusers themselves are the guilty party. At least in India we do not have a dignified way of accepting our sins like Japan otherwise most of our population problems would have been resolved in almost honourable manner.

But what must not be missed at all is the fact is that the very people who were publicly criticizing B.Ed. correspondence were indeed readily available to take classes of these students during Personal Contact Programmes (PCP). If a serious study was ever made it would come out very clearly that the regular teachers of B.Ed. who seldom take their own classes or read to teach, were not only actively participating in these correspondence classes but also wrote lessons for them.

On this ground alone B.Ed. correspondence is a misnomer because it is the teachers of face to face who offered their full services voluntarily in helping these so-called distance mode teachers for a consideration.

The study undertaken on behalf of IGNOU's, UNESCO chair by us is presented here in three small subsections.

Section 1

This section contains the written remarks of the two major functionaries of M.D. University, Rohtak — one of the publicly accused parties. Professor D.K. Chaddha who is on the verge of his retirement was at one time incharge of the correspondence as well as face to face simultaneously. The other gentleman Dr. B.S. Dagar is currently Coordinator of Correspondence Courses and also head of the Education Department offering face to face B.Ed. Courses. Such combinations being rare are worthy of note.

Professor D.K. Chaddha is emphatic about the value of B.Ed. correspondence. He, however, states clearly that till the time both correspondence and regular B.Ed. were with the Department of Education everything was hunky-dory. The reasons for the so-called commercialisation were as under :

1) A Professor of Political Science was made Incharge, Correspondence Courses. His ignorance of the so-called Education Discipline created the problem besides he was also unfamiliar with the mode itself.

2) In the beginning only those who could produce a certificate of two-years' experience as a teacher were allowed to join in. Later this requirement was abandoned.

3) By offering this course on a mass scale after abandoning the initial requirements of proper senior faculty of education and the requisite experience etc created problems.

   The problems were reflected both in the quality of PCP and the lessons prepared for teaching.

4) Professor Chaddha has also admitted that the M.D. University, Rohtak is dependent on this course alone to finance its other courses. The reason for commercialisation is therefore, lack of State support and poor financing of higher education as such.

Why then blame the D.E Mode? Professor Chaddha thinks that matters can still be rectified if action, were taken at all levels in all dimensions. To put blame on the mode alone is not justified.

Dr. B.S. Dagar, currently Incharge of both modes believes that relatively face to face mode would be superior to the D.E. Mode. In fact had the DE mode the benefit of an extensive technological support, there was no reason why this mode also cannot be brought at par with the face mode. The numbers in that case may not matter.

He is however extremely critical of both modes because the end product is identically worthless — because its motivational levels are poor, cognition perfunctory and commitment to profession almost non-existent.

One of his field studies was undertaken on our behalf which is already cited above and published, in which B.Ed's as such were found wanting in all respects.

Not unlike Professor Chaddha, Professor Dagar also says the mode is immaterial — what is material are the operative conditions and the real intentions.

Section 2

This section reports the results of a study of a Ph.D. scholar of Professor D.K. Chaddha. The degree was awarded couple of years back and the scholars is currently a senior faculty member of SCERT, Delhi.

The title of this research shows that the study being undertaken by us is almost similar to the one she had undertaken.

"A comparative Study of the Scholastic Performance, Teaching Aptitude, Attitude and Reading Interests of the B.Ed. Pupil Teachers enrolled in the Campus based (i.e. face to face mode) and Distance Teaching modalities."

Interestingly enough, this work does not contain a single good quality among the pupil teachers of Distance Education mode as compared to the campus mode.

The D.E. mode students lack scholastic abilities, possess less positive attitude, are poor in reading habits etc. In the words of the scholar "The present study has established the relationship between the scholastic performance, teaching aptitude, attitude towards teaching and reading interest of B.Ed. pupil-teachers, on one hand and has shown the difference between scholastic performance, teaching aptitude, attitude towards teaching and reading interest of the students of the two streams of teacher education on the other hand."

Also, "B.Ed. pupil teachers of the two modes differ significantly from each other in their teaching aptitude as the critical ratio (4.52) is found to be significant at 0.01 level of confidence."

On the whole this dissertation is more damning of the D.E. mode than could be logically defended. On the basis of common sense alone one could note :

a) Except for the modes the samples are not wel matched. Even with the same sample homogeneity of purpose plays a significant role in the results.

b) Reading habits is a 'vegue' term. Which books or what newspaper is all that matters.

If one can pass B.Ed. examination without reading a single reference or textbook beyond made easy notes; if even their teachers do not enjoy the reputation of being well-read (Read, B.H.U. dissertations on teachers' reading habits) one cannot talk about these habits with any degree of certainty. If one administered the same tool on teachers of both modes too the results may not differ very widely.

It may sound extremely cruel to say but the fact is that teachers mirror a social reality. The reality is there are no jobs and therefore matching of aptitudes with jobs may not be very helpful.

Teaching has certain determined goals and functions and it is not very strange to find many teachers unsuitable for their profession not merely on the grounds of aptitude but on other equally valid grounds of lack of compassion, empathy, ability to express etc. Indeed studies are available which suggest that cruelty, absenteeism, avoidance of duty etc are a widespread phenomenon at all levels of education and society puts up with all this because society has little or no concern with education itself.

c) Indian Ph.D.s appear to be more adept in statistics than in the logic of the arguments. One hardly comes across an educational thinker or one who understands even the elementary norms/steps of logic. Statistics is generally used to hide flaws in logic than to support an argument.

Section 3

This section reports our failure in convincing teachers to help us have their individual reasons for entering B.Ed., face to face or the distance education mode, their expectations and achievements in that direction and listing the actual benefits and also how these degrees and their modes have played a role in their professional careers. Indeed on these case-studies alone we could have surmised the efficacy or otherwise of the mode which they had opted for and the relative merits of the either mode as well could have then been presented.

However what we present now is the result of a kind of questionnaire because what was given to them as points for preparing their individual cases in favour of the B.Ed. programme, choice of mode, content relevance etc were taken as questions and answered matter-of-factly.

Still, whatever responses we have throw light on the scenario as it exists.

We have 17 respondents although our original intention was to have no more then 2 or 3 from each mode. Also, the respondents are mostly from Delhi but there are 2 from Agra as well. A few are from Meerut, Udaipur, Banasthali etc. The majority of teachers are from M.D. University, Rohtak in which both modes are represented. In the Distance mode we have four degree holders of Annamalai University too but only two are from M.D. University, Rohtak.

The data presented below is neither statistical in form, nor has it been given the shape of a table. The replies are mostly about why did they opt for a B.Ed. and why did they elect to have a given mode.

All answers pointed out that a B.Ed. was helpful in getting job and the choice of mode had everything to do with convenience. Whereas the Annamalai students were all English medium, M.D. Rohtak's had Hindi as their medium. It is possible to observe a few more distinctions between the M.D. Rohtak student-teachers and those of Annamalai. For instance, at least the latter were more observant and pointed out the major troubles they faced in their contact programmes. In the case of M.D. either they faced no problems or did not feel like reporting.

Getting a job was the major consideration.

A detailed analysis of response regarding the benefits of acquiring B.Ed. which accrued to them are as follows :

1) helped the possessor get a job or start a school of one's own,
2) helped in managing classes and understanding individual differences,
3) helped in evaluating answer books,
4) helped in getting better examination results for the students,
5) helped at the time of interview for job,
6) helped in blackboard work, and teaching aids,
7) helped gain confidence in class etc.

Surprisingly there was absolutely no difference between the responses of candidates whether their degree had been obtained through the regular, face to face mode or the one called 'correspondence mode'. Even the institutions or the medium of institution, placement, socio-economic background etc had lost any relevance whatever.

One suspects that the respondents had received wrong signals therefore, their answers were uniformly positive about the relevance of B.Ed. itself irrespective of its mode. Instead of justifying their acquisition (real or imaginary) they were trying to find support for their imagined goals. They failed to distinguish between the real and the expected achievement. The nature of responses puts a serious question mark regarding the purported meaning of the responses.

If the respondents did not belong to different schools or had not had such widely different academic backgrounds — one could easily suspect that the answers had been copied or dictated. Even so there is reason to believe that this matter needs some more in-depth research and cross checking.

In the end one could only say that but for the statutory requirement there is not much evidence to suggest that either mode has particularly any great relevance or is capable of yielding spectacular results.

The policy makers should stop to question the validity of the yields of differing modes and take the cue from the fact that even those who have very little interest in reading also learn no less than the ones who read a lot. If modes, learning and reading habits make no difference in the making of a schoolteacher, it is a matter of concern to discover the reasons for their success anew. Or is it all really very necessary to learn, now at least one is not so sure.

(Concluded)

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Vocationalisation of Tourism Studies

Adarsh Batra*

Today, tourism is the world's fastest growing industry. This industry provides both monetary gains and social benefits. It is the unique characteristics of this industry that it earns valuable foreign exchange without exporting National wealth. The popularity of Tourism has led to manifold growth of business traffic in India also. The exponential growth in Tourism sector has left the industry with acute shortage of trained manpower.

Young aspirants, who want to make fast-track career, should be polite and hardworking. You should be proud of your cultural heritage. You should have the aptitude for learning foreign languages. You should have the ability to meet and communicate with people and handle them. These personality attributes are must for being in a Service Industry.

In India, many vocational schools have come up with tailor-made courses for those interested in Travel Management. These courses are designed in such a way that cover each and every detail of Travel related documents for foreign travel, manual and computerised reservation and ticketing, travel terminology etc. Vocational institutes and travel related companies frequently conduct airlines, tourism and travel courses.

In India, 25 prominent universities have launched Tourism education at postgraduate level including Aligarh Muslim University, Jiwaji University, Gwalior, Kurukshetra University, Lucknow University, Himachal Pradesh University, Shimla, University of Pondicherry etc. These universities either provide one year diploma course or two year postgraduate degree course in Tourism Administration or Tourism Management. Interestingly 22 universities in India have opted for Tourism as subject in undergraduate classes in their affiliated colleges including University of Delhi, Kurukshetra University, Kumaon University, Nainital, University of Mumbai, Himachal Pradesh University, Shimla etc. All over India, there are 37 colleges having Tourism as vocational subject at undergraduate level including four colleges in tiny state of Haryana. (Mathur, N. (1998), *Future of Domestic Tourism in India : A focus on Human Resource Development Domestic Tourism in India.* Indus Publishing Company, New Delhi). Apart from these, there are other institutions and polytechnics etc available running Tourism courses. Prominent among these are SITA World Travel, Travel Corp (I) Ltd., Trade Wings Ltd. etc. Along with theoretical studies, students are exposed to practical aspects of Tourism industry by undertaking on the job training at various prestigious institutions like travel agencies, tour operators, hotels, domestic and international airline offices, resorts etc.

The Indian Institute of Travel and Tourism Management (IITTM) established in January 1983 is a registered society for teaching and research in Tourism. IITTM has branches at Mumbai, Thiruvananthapuram, Gwalior, Lucknow, Kozhikode and Calcutta. IITTM conducts short term programmes in Ticketing, and Cargo Management in collaboration with Air India Staff College, Mumbai, Water Sport Training Programme in collaboration with National Institute of Water Sports Goa, Airline Management, Tourism Marketing, programme for forest service officials etc.

Job aspirants in tourism industry can have edge over others if they have knowledge of foreign languages. Many universities in India and private institutes offer certificate, diploma and degree course in French, German, Japanese, Spanish and Russian Languages.

Rather than asking for job in Metros this career can take one to such a height as one can establish one's own travel company which can provide job to others. Not much investment is required for this. A new entrant can earn Rs. 3,000 to Rs. 4,000. Later on, depending upon experience and performance one can move up in the hierarchy. Apart from basic salary, special incentives and perks are available. Those interested in travelling, can fulfil their ambitions by taking up this career. To be successful what you need is skill, contacts, psychological understanding of the changing aptitudes of people. ❑

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IT Clinic : A Centre for Intrernship, Entrepreneurship and Peer Industry Interaction

Om Vikas*

Introduction

IT (Information Technology) education and training programmes are offered at various levels : certificate, diploma and degree. Convergence of computer, communication and consumer electronics has resulted into a rapidly growing discipline of Information Technology. Newer tools and techniques are being developed to enhance productivity, user-specificity and quality. According to Moore's law, processing speed doubles every 18 months. With rapid decline of price-to-performance ratio, progressive miniaturization and user-friendly software, newer application areas are opening. Capsules of IT solution attract involvement of real users, content experts and knowledge generators. IT enabled contribution becomes specific, more and fast. Treasure of IT tools, techniques, solutions and services richer stack with latest ones on top over the recent ones fast becoming obsolete. Rate of obsolescence is very fast. Industry surpasses the academia posing threat to the relevance of IT curriculum. This phenomenon results into growing demand for IT professionals and the IT trainers. Discussion with CEOs of some software units in the STPI (Software Technology Park of India), Noida revealed that many students perform quite unsatisfactorily when they are put on the real-life projects. It is therefore necessary to think of new models of IT education & training. Integrated system of coherent IT education needs to be developed. This will include IT education & training at school/ ITI, Polytechnic, Diploma and Degree levels. At each level, three components are important : curriculum, content and practical training; and three players are important : trainee, trainer and employer. People are critical resource in any IT-based environment. Human resource in industry should be defined not by what it does but by what it delivers. Many high-paying jobs demand not just the ability to use advanced technology, but the ability to create it. Frank Levy, MIT (USA) Professor states in an article in *Sunday New York Times*, 16 February, 1997, "Those with third world skills will earn third world wages."

Practical Training is normally of a duration of 6 weeks to 12 weeks which is considered very short and has not been found useful. Industry does not take students for such a short period. Moreover such a training does not provide exposure to any major project, and there is no emphasis on total solution approach, teamwork, quality, re-engineering and systems integration skills that industry demands. Industry needs personnel with following capabilities :

a) Cognitive Knowledge (*know-what*) : basic mastery of discipline

b) Practical Proficiency (*know-how*) : ability to translate theory into practice

c) Instinctive Perception (*know-why*) : in-depth perception of cause and effect of relationships

d) Achievement Motivation (*care-why*) : desire to achieve success

e) Inter-Personal Interaction (*concern-who*) : ability to deal with people for common goal.

Employers' demand is for a practically trained personnel capable of handling a goal oriented team project. Trainers need to continuously update knowledge about newer technologies and tools. They should remain active in research and development as well.

Hence, it is important to train students to meet industry's expectations, to facilitate peer industry interaction to learn from each other, to facilitate industry-institute interaction to jointly solve problems and to identify real-life R&D problems in the field of Information Technology.

A novel model of "IT Clinic" is proposed to benefit all the three players : trainee, trainer and industry-employer. As the analogy derives from the medical science education, we may call it Internship Model.

Internship Model

A patient is diagnosed by team of expert professor and his trainees in the OPD (Outdoor Patients Dept); many patients are prescribed treatment at home, and a few serious patients are admitted. Their clinical tests are done regularly. Their diagnostic data is discussed by the team of subject experts : medicine, microbiology, surgery, radiology, etc. An opera-

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**Department of Electronics, 6, C.G.O. Complex, New Delhi. E-mail:omvikas@doe.ernet.in* tion is carried out by a team of experts of surgery, anesthesia, radiology along with the trainees. Admitted patient is charged for treatment.

This reveals the importance of multi-layer analysis, integrated design, testing, evaluation and delivery of total solution. More and more complex systems are being designed using newer tools. Real life problems of the industry are of various types but a number of problems are of similar nature. Such kind of tacit knowledge based on situation-specific experience is often not available through formal system of education and training. Hence it is proposed to set up "IT Clinic" which invites the researchers from academia, consultants from industry and trainees from IT institutions. IT firms bring their problems, describe them preferably openly in front of peer-industry firms, experts, consultants and internship trainees. Immediate solutions of routine nature are advised on the spot. For the problems, which require design and development efforts, the concerned firm is advised to fund a project to obtain the solution. The technology development work is carried out by the team of experts and interns/trainees. Once the problem is admitted, a detailed analysis report is prepared. Cost, duration, intermediate achievements, IPR issues, and spin-off benefits are worked out. The development work may be carried out within IT Clinic, or it may be subcontracted. The team is again involved in test and evaluation of the technology thus developed. This will provide the trainees exposure to practical problems relating to refinement of the models and integration of various solution modules.

Surgical Team

Programming managers have long recognized wide productivity variations between good programmers and poor ones. Large systems are built by few minds. Brute force approach is costly, slow, and inefficient and produces systems that are not conceptually integrated. Small sharp team should not exceed 10 people. It appears too slow for a really big system. But productivity of a programmer in a small sharp team may be assumed about 7 times of that of a mediocre programmer. Another productivity improvement factor of 7 comes from the reduced communication on the part of the smaller team. Thus a job requiring 5000 man-months can be done by a small sharp team in 5000/(10 x 7 x 7) = 10 years. But product may not be of interest after 10 years. Hence multiple sharp teams need to be prepared.

Harlan Mills (1971) offers an innovative solution that each segment of a large job be tackled by a small team, but the team must be organized like a surgical team. That is, instead of each member cutting away on the problem, one does the cutting and other gives him every support that will enhance his effectiveness and productivity. Few minds are involved in design and construction. yet many hands are brought to bear. Who are the anesthesiologists and nurses on a programming team, and how is the work divided? Harlan Mills describes the actors of the team as follows :

The surgeon : chief programmer/designer. He needs great talent, considerable systems and applications knowledge.

The co-surgeon : associate chief programmer/designer. He is able to do any part of the job, but less experienced. He acts as a thinker, discussant and evaluator in the design. He represents his team and interfaces with other team. He researches alternate design strategies.

The administrator : to handle money, people, space and machines. One administrator may generally serve two teams.

The editor : The surgeon generates the documentation with maximum clarity. The editor reworks it, provides with reference and bibliographies.

The program clerk : to maintain all the technical records of the team. He facilitates transformation of programming "from private art to public practice".

The tool smith : to provide basic services such as file-editing, text-editing, and interactive debugging services. The tool builder will construct specialized utilities, catalogued procedures, macro-libraries.

The tester : an advisor who devises system test cases from functional specifications and an assistant who devises test data for day-by-day debugging.

The language editor : He finds a neat and efficient way to use a programming language.

How it works? : Ten people, seven of them are professionals they are at work on the problem and other three support.

Benefits

IT Clinic will benefit small industries, IT trainees, IT experts and consultants. This will effectively facilitate Industry-Academia interaction. Expert faculty from academia will get an opportunity to know of real life problems of the industry. Intrinsic academic competition will set in when experts from industry as well as academia work together in the IT Clinic. Moreover, peer-industries do not normally interact with each other. They will benefit from each other's problems and potentials while presenting IT problems in the IT Clinic. IT technicians and IT software design trainees will get exposure to real-life problem solving methodology aiming at attaining total solution. IT professionals can also participate and interact with a number of industries, and may evolve niche areas for further research and development. IT localization is another dimension to develop locale-specific IT solutions taking into consideration the local language(s) and cultural practices. This will accelerate the process of IT penetration into the society yielding transparency, better quality of life, higher velocity of business, collaborative working.

Self-Sustainable Centre

IT Clinic will also organize (a) the specialized IT training programmes on emerging topics such as object oriented technology, Web Engineering, Internet tools, Visual computing, Multimedia Tools, JAVA, ERP, Data Warehousing, Client-server, RDBMS, Best Practices in IT etc; and (b) the entrepreneurial courses on banking, finance, accounting, project management, total quality management (TQM), personnel management, case studies of success stories etc.

Thus the proposed model of the IT Clinic will emerge as a composite centre of internship, entrepreneurship, technology development and high-end/emerging IT training. This will benefit student trainees, trainers in academia/industry, and small industries alike. The student trainee will gain the project experience that he would have otherwise gained during next 5 to 7 years. Hence his job market value greatly increases. This will also accelerate the rate of technology absorption in the society. IT Clinic may be set up in Software Technology Parks and technical institutions of excellence. A consortium of member IT industries may support this. IT Clinic may be open to small firms twice a week with prior appointments. Tentatively IT clinic may become a self-sustainable centre of excellence with revenue from consultancy, technology development, specialized IT and entrepreneurship training programmes.

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INSTITUTE OF BUSINESS MANAGEMENT

BELA, DARBHANGA (BIHAR) - 846004, ESTD. 1983

(Approved and aided by the All India Council for Technical Education (A I.C T.E.)
& Affiliated to the L. N. MITHILA UNIVERSITY)

M.B.A. ADMISSION NOTICE (1999-2001)

Applications on prescribed forms are invited for admission to the ***14th Batch of 2 year Master of Business Administration (M.B.A.) Degree Course.***

Eligibility : Bachelor's degree in any faculty.

Written Test : Will be held at **Calcutta, Darbhanga, Delhi & Patna on the 22nd August, 1999.**

NRIs & Sponsored Candidates : May be given weightage, if otherwise found suitable.

Hostel Accommodation : Available for boys & girls both.

Application Forms : Prescribed application forms along with Information Bulletin can be had on payment of **Rs. 250/-** only in cash or through **Bank Draft** payable to the **Institute of Business Management, Bela at Darbhanga.** Completed applications with requisite fee must reach the undersigned latest by the **2nd August 1999.**

J. MUNINDRA
DIRECTOR (ADMINISTRATION)

Economic Sense of Science

Dr. R.A. Mashelkar, Secretary, Department of Scientific and Industrial Research and Director General, Council of Scientific and Industrial Research, New Delhi delivered the convocation address at the annual convocation of Dr. Babasaheb Ambedkar Technological University, Lonere, Dist. Raigad. He said, "One of the big challenges before India is to make an economic sense of the science that it does. Science can make economic sense only when we awaken the scientist in an entrepreneur and also entrepreneur in a scientist. Nations that occupy leading positions have successfully done this but in India we have not done it successfully. Further our science-business links have been traditionally very poor. We need to improve them." Excerpts

The view of Tomorrow emerges from Today's perspective. In order to visualise Tomorrow, I have to define my Today and there are two ways of doing it. One is to say that Today is the mundane extension of Yesterday. In that case, Tomorrow, also, will be mundane extension of Today, and we will go on living with marginal changes — life as usual and business as usual. However there is another way of looking at Today. We can decide what our Tomorrow is going to be and use Today as the launching pad to realise that vision. I much prefer the second way.

Let us focus on building the new India of our dreams. Today, people describe India in many different ways. Some say, India is a rich country where poor people live. Our richness is due to our intellectual prowess, our biodiversity, our traditional knowledge base, our culture and heritage and, of course, our rich entrepreneurial spirit. But we have not created wealth out of this, and so we have remained poor. The Indian challenge is simply that rather than being described as a rich country where poor people live, someday someone will have to describe us as a rich country where rich people live. This can happen, only when we realise the wealth creation potential of knowledge. This is one of India's major challenges as we move into the twenty first century.

There is a new definition of wealth today. Wealth is no more measured in terms of fixed assets such as buildings, land, bank account, etc. It is measured in terms of those knowledge based systems, which add value. In today's world, goods, services, data, people etc cross the physical borders of different nations freely. However, adding value through knowledge gives a nation competitive advantage.

We see India in transition today. We see some welcome changes today. We are talking not in terms of aid anymore, which we were used to in fifties, sixties, seventies and eighties. We are talking about trade. We are not talking about borrowing. We are talking about investment. If you look at the Government, we are saying that we will be promotional, not regulatory. We will be facilitative not obstructionist and we will be responsive and not coercive. And science and technology, which is the key to growth, will be looked at as an investment and not as an expenditure.

Let us focus on this issue of Indian science and technology. India is advantageously placed with a very rich scientific infrastructure. Indian science has done us proud over the years.

Let us not forget that in the mid-sixties, we were going to the western world with a begging bowl and today we are the highest producers of rice in the world, with practically 20 per cent of the share of the world produce. This would not have been possible without our agricultural scientists. This was the Green Revolution. And then there is the blue revolution done by our space scientists through many of their magnificent achievemets. Let us look to our skies. IRS-IC is the most sophisticated satellite that we have in the world today with an unmatched resolution of 5.5. metres. We are proud that it is a satellite developed and launched by India, one of the poorer nations in the world. And then there is a white revolution. We are the largest milk producers in the world today, thanks to the inputs of science, technology and organisation at the grassroots level that was so imaginatively conceived and led.

One of the big challenges before India is to make an economic sense of the science that it does. Science can make economic sense only when we awaken the scientist in an entrepreneur and also entrepreneur in a scientist. Nations that occupy leading positions have successfully done this but in India we have not done it successfully. Further our science-business links have been traditionally very poor. We need to improve them.

What changes of mindsets will be required if the science-business link in India has to be strengthened? Firstly, our Indian industry will have to champion R&D with vigour. Apart from its willingness to invest in R&D, the industry

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NATIONAL EXPENDITURE ON RESEARCH AND DEVELOPMENT BY SECTOR

(Crores of Rupees)

Year	*Central Government*	*State Governments*	*Public Sector Industry*	*Private Sector Industry*	*Total*
			Current Prices		
1976-77	268.78	25.20	31.76	48.42	374.16
1980-81	494.12	59.34	86.37	120.69	760.52
1985-86	1455.44	162.78	198.62	251.94	2068.78
1989-90	2521.02	301.23	412.90	490.59	3725.74
1990-91	2643.74	365.92	414.53	549.98	3974.17
1991-92	2982.90	408.58	484.39	636.94	4512.81
1992-93	3150.89	503.51	513.95	836.25	5004.60
1993-94	3986.17	561.50	542.81	982.54	6073.02
1994-95	4427.72	588.40	685.33	1119.57	6821.02
			Constant Prices (Base 1980-81)		
1976-77	373.37	35.01	44.12	67.26	519.76
1980-81	494.12	59.34	86.37	120.69	760.52
1985-86	973.12	108.84	132.80	168.45	1383.21
1989-90	1239.34	148.09	202.98	241.18	1831.58
1990-91	1172.-03	162.22	183.77	243.82	1761.84
1991-92	1152.18	157.82	187.10	246.03	1743.13
1992-93	1121.54	179.22	182.94	297.66	1781.36
1993-94	1294.48	182.34	176.27	319.07	1972.16
1994-95	1295.36	172.14	200.50	327.54	1995.54

Note :
1. The number of units in the private sector varies from year to year.
2. GNP at factor cost is used.
3. For working out constant prices, GNP price deflators as per Economic Survey 1995-96 have been used.
4. Central Government excluding Public Sector Industry.
5. 1 Crore = 10 Millions.

Source : *Science & Technology Pocket Data Book 1995*, Department of Science & Technology, Govt. of India, New Delhi, 1997.

RESEARCH AND DEVELOPMENT EXPENDITURE BY GOVERNMENT BY CHARACTER OF WORK

(Crores of Rupees)

	Central Government				*State Governments*				*Total Government*			
Year	*Basic Res.*	*App. Res.*	*Exp. Dev.*	*Total*	*Basic Res.*	*App. Res.*	*Exp. Dev.*	*Total*	*Basic Res.*	*App. Res.*	*Exp. Dev.*	*Total*
						Current Prices						
1976-77	37.83	129.55	59.95	227.33	2.35	17.34	3.73	23.42	40.18	146.89	63.68	250.75
1980-81	98.78	187.71	167.99	454.48	5.86	36.70	14.45	57.01	104.64	224.41	182.44	511.49
1985-86	227.38	458.33	497.63	1183.34	28.57	69.48	64.72	162.77	255.95	527.81	562.35	1346.11
1990-91	658.26	1085.30	900.18	2643.74	55.73	212.60	97.59	365.92	713.99	1297.90	997.77	3009.66
1991-92	745.26	1219.08	1018.56	2982.90	64.15	248.27	96.16	408.58	809.42	1467.35	1114.71	3391.48
1992-93	673.09	1360.03	1117.77	3150.89	82.21	275.77	145.54	503.52	755.30	1635.80	1263.31	3654.41
1993-94	842.08	1706.47	1427.62	3976.17	90.81	307.99	162.70	561.50	932.89	2014.46	1590.32	4537.67
1994-95	938.42	1885.62	1603.68	4427.72	90.46	324.94	173,00	588.40	1028.88	2210.56	1776.68	5016.12
						Constant Prices (Base 1980-81)						
1976-77	52.55	179.96	83.28	315.79	3.26	24.09	5.18	32.53	55.82	204.05	88.46	348.33
1980-81	98.78	187.71	167.99	454.48	5.86	36.70	14.45	57.01	104.64	224.41	182.44	511.49
1985-86	152.03	306.44	332.72	791.19	19.10	46.46	43.27	108.83	171.13	352.90	375.99	900.02
1990-91	291.82	481.14	399.07	1172.03	24.71	94.25	43.26	162.22	316.53	575.39	442.33	1334.25
1991-92	287.87	470.88	393.43	1152.18	24.78	95.90	37.14	157.82	312.65	566.78	430.57	1310.00
1992-93	239.58	484.09	397.86	1121.54	29.26	98.16	51.80	179.22	268.84	582.25	449.67	1300.76
1993-94	273.46	554.16	463.61	1291.23	29.49	100.02	52.84	182.34	302.95	654.18	516.44	1473.57
1994-95	274.54	551.65	469.17	1295.36	26.46	95.06	50.61	172.14	301.01	646.71	519.78	1467.50

Note :
1. For working out constant prices, GNP price deflators as per Economic Survey 1995-96 have been used.
2. GNP at factor cost is used.
3. Central Government excluding Public Sector Industry.
4. Government = Central Gvoernment excluding Public Sector Industry + State Governments.
5. Basic Res. = Basic Research; App. Res. = Applied Research; Exp. Dev. = Experimental Development
   Total = Research & Development = Basic Research + Applied Research + Experimental Development.
6. Data for which break-up available is reported.
7. For Private and Public Sector Industry break-up of Research and Development expenditure by character of work is not available.
8. 1 Crore = 10 Millions.

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should be willing to take risks and should have patience to wait for returns. Publicly funded R&D institutions should be used as idea generators and providers of new concepts by our industry. Industry should not simply look at the institutions as super markets, where off the shelf technologies are sold. Indian industry should be prepared to assume the role of partners, who have the technical, financial and marketing strengths to take ideas to the market place. In the true spirit of partnership, the industry should willingly integrate national R&D resources into their business strategy. All this would be possible only when we change the climate for an interaction between our institution and industry with an improved communication and understanding, faith in mutual growth and development of healthy working relationships.

Let us deal with one myth before we move on. As we know, opening up of the economy and integration of Indian economy with the global economy is a process that has already gained momentum over last five years. There is a mistaken notion that opening up will result in our having unlimited inflow of technology and therefore we do not have to now worry about developing technology and therefore we do not have to worry about developing technological strength by sweating it out! After all technologies will be available on platter. All that we have to do is to acquire them and adapt them. Nothing can be farther from truth.

I wish to emphasise that there is no substitute for creating technology movement in the country. One element of this technology movement is the science-business link. There is no substitute for our industry itself investing heavily in in-house R&D and synergising with our national institutions.

The potential of knowledge as creator of wealth is gaining currency all around the world. But only knowledge that is protected or protectable can have the potential of wealth creation. The inclusion of IPR in the GATT agreement is an indication of this realisation. We will have to pay urgent attention to enhancing our levels of innovation and creative sustainability. A major change in the offing is due to India's accession to World Trade Organisation (WTO). Generation of intellectual property, its capture, documentation, protection, evaluation and its exploitation assumes a crucial importance in this context. Indeed, there will have to be a sea-change in our ability to manage our intellectual property — be it patents, copyrights, designs, and so on. The greatest challenge will be posed by patents.

Skills in filing, reading and exploiting patents will be most crucial in the years to come. Our ability to read or write patents is very poor. In that sense, patent literacy in India is lacking to a great extent. A patent literacy mission will have to be launched with a sense of urgency. Neither can we properly protect our inventions nor can we understand the implications of patents granted to our competitors. Thus, we may have a good invention, but we cannot effectively protect it by patents filed abroad as many of the patents written by our professionals could be easily circumvented. It follows readily that creating top class professionals in patent writing will be an urgent requirement. How do we create, within our system, a cadre of top class professionals, who will fight these battles? These are the burning questions.

We need not only "patent literacy" but also "literacy about patents". There is an urgent need to educate the masses, since there are several misconceptions that are prevailing in India today. There is a common misunderstanding that the intellectual property protection will cover all the existing known material. Thus one often hears about fears in India that Neem will be stolen. Tulsi will be stolen, and so on. This is not correct. CSIR has won the turmeric patent case in USA recently. This is a landmark event. It sends several signals, one of them is that we are perfectly capable of fighting these legal and technological battles.

We must benefit from India's rich biodiversity. For instance, India is endowed with rich natural resources like medicinal plants. India has also an established ayurvedic and herbal systems of medicine. It is possible under new patent regime to protect the active ingredients responsible for the effectiveness of these systems, if they were not known so far. If new compounds or extracts are isolated from different plants, which have important activities, then it will be possible to obtain protection. Even if the compostion of the extract is not identified, it is possible to obtain protection. At a later stage, if specific ingredients of the extract are isolated, identified and characterised and if they are new, then product protection for these new compounds can also be secured. India will have to launch a systematic effort to create wealth out of these biodiversity. My personal view is that we ought to develop strong systems to protect our endogenous sources by upgrading our skills on patenting at level with the rest of the world. Perhaps it is not widely known that out of

(Contd. on page 26)

CAMPUS NEWS

Vision for a Better World

Mr. Ismail Serageldin, Vice-President (Special Programmes) of the World Bank, outlined a new vision for a better world in which the United Nations Educational Scientific and Cultural Organisation (UNESCO) sets the agenda for creating a nurturing and caring global society.

"A revolution is needed in the field of education, science and culture if we have to create a better world for tomorrow and the mandate of UNESCO is best suited to accomplish this task," Mr. Serageldin said at a lecture on "The Challenges of the New Millennium and the role of UNESCO" in New Delhi recently.

He said the UNESCO was an ideal platform for designing the future where the inequities within countries and between them and the growing disparities between the rich and the poor are bridged. At the same time, people the world over need to honour their past and celebrate the present and UNESCO could help create the balance.

According to Mr. Serageldin, one of the most important tasks before the world community at a time when economies have already become knowledge-based and the Internet revolution has made the world a global village is to use these revolutionary developments to fight hunger. "We need a breed of new abolitionists who will try and inculcate a caring spirit in people," he stated.

At the same time, he stated that the scientific revolution needed to be handled with creativity and imagination in such a manner that it helped improve the lot of the poor and the mariginalised.

He said that globalisation was trying to create a homogeneous mass of people which was against the basic human ethos of cultural pluralism.

According to him, the world urgently needed a new thinking which will not just eulogise science for the magnificent results it has produced but which will respect the scientific values systems and the free spirit of enquiry as also the free flow of information.

Anna Varsity Plans Web-based Courses

In a pioneering venture in technical education, Anna University, Chennai plans to introduce modular credit based courses through distance education mode using Internet and other electronic media.

Taking advantage of the tremendous improvements in information technology, "we hope to come out of the campus to offer the Web-based or satellite courses using a variety of technologies," said Dr. A. Kalanidhi, the Vice Chancellor of the University.

"We may need to change some of the university laws so that people from outside this State would also benefit from the electronic-medium based courses," he added.

Dr. Kalanidhi said the University hoped to target in the first phase the large number of technical education teachers in government, aided and self financing engineering colleges, who did not possess PG or research degrees.

"At the present levels of IT, anyone can acquire this education." The credit based modules would provide a flexible technical education to the teachers even while they continued to work.

When technology and quality consciousness were growing rapidly in a liberalised scenario, technical education too had to follow suit. Globally, industries were talking about quality assurance and accreditation or ISO norms.

The same norms were needed to be extended to technical education and teaching, so that the teachers upgrade their professional skills. In the next phase, the University hoped to target skilled professionals in industry, who also needed to be retrained in line with the emerging technologies, Dr. Kalanidhi added.

"As a pioneering technical university, we want to use all means to give education at the doorsteps of the professionals. Through the modular credit based technical education, they could get MS or Ph.D. Various university committees were working on the details of the programme.

The University could think of having an exclusive satellite channel for the courses, he said and added that some of the materials were available on CD-ROM form, which could be evaluated and adopted for the modules.

The needed resources could come from grants, which many were prepared to provide or through internal mobilisation from the beneficiaries of the courses itself, Dr. Kalanidhi said.

Educating the Tribals in Tamil Nadu

The Tamil Nadu Government has embarked on an ambitious programme of taking education to the reach of every Adi Dravida and tribal in the State," said Mr. Samayanallur S. Selvaraj, Minister for Adi Dravida and Tribal Welfare, after distributing free textbooks to Adi Dravida students in Madurai recently. Mr. Selvaraj said the government had earmarked Rs. 310.49 crores for the education of tribals and Adi Dravida students during the current financial year. It also had sanctioned Rs. 509 crores for various welfare schemes.

The Minister pointed out that 25 primary schools had been upgraded into middle schools for whose development, Rs. 41.28 lakhs had been sanctioned. Besides, 94 schools had been upgraded into the middle, high and higher secondary school status. Educational scholarships for students of schools and colleges had been enhanced and Rs. 45.82 crores had been earmarked for the same. As many as 42 Adi Dravida students hostels would be built at Rs. 13.86 crores. The Government also had sanctioned Rs. 6 crores for the Adi Dravida women education in villages. Nearly 90,000 girls would be benefited, he added.

In tune with the changing educational scenario, the government had also decided to introduced computer education for the advantage of Adi Dravida and tribal students. A sum of Rs. 1.80 crores had been allocated to implement computer education programme in 60 Adi Dravida and tribal high and higher secondary schools.

The Minister added that teachers had already been given training in computer operations. He said free text books at a cost of Rs. 3 crores were being distributed. Free uniforms were also being provided. Textbooks had already reached the respective schools.

Doctoral Program in Australian Studies

Jawaharlal Nehru University is reported to have instituted a scholarship for pursuing a doctoral programme in Australian Studies with the aid of the Australian Educational International India.

Education and training counsellor at the Australian High Commission, Dr. Bernadette McDonald presented a cheque of Rs. 4,00,000 to JNU Vice-Chancellor Dr. Asis Datta for the purpose.

Courses in Archaeology Management

The Delhi Government is reported to have launched an institute for studies in management of heritage. Making this announcement in New Delhi, Education Minister Narendra Nath said : "This would be the first institute of its kind in Asia. Conservation of the monuments was a big challenge. We need trained professionals to meet this challenge."

The institute is affiliated to the newly established Indraprastha University. "The Delhi Government has made a provision of Rs. 50 lakh in its budget for the upcoming institute," the Minister, who is also chairperson of the institute, said.

Addressing the reporters, vice-chairperson Shri R.C. Tripathi said the institute was offering two Master degree courses from the new session.

"The courses are Archaeology and Heritage Management and Conservation, Preservation and Heritage Management.

The entry to the courses would be made through an all-India entrance test," Mr. Tripathi said.

Each of these courses would have 30 odd seats with 85 per cent vacancies reserved for graduates from Delhi.

While the first course was open to all the graduates, the second is only for Science graduates.

Collection Centre for CD-ROMs

The Union Ministry of Science and Technology has designated the Indian Institute of Technology, Delhi as the National Collection Centre for CD-ROMs, published in India and on India, to act as a Single Window Information Service Centre for Indian CDs.

All one has to do is walk into the IIT campus and head towards its Foundation for Innovation and Technology Transfer (FITT) unit to use any CD-ROM you choose, at no extra cost.

The Centre has recently obtained all CD-ROMs available on the game. Other attractions in the collection include a CD on the Mahabharata, developed in the form of an animated story book. For corporate executives, the Centre offers CD-ROMs containing databases on patent applications filed in India. IIT also has a CD containing nearly 50,000 records on patents granted in India from 1972 to 1997.

Deputy Manager, National Collection Centre, A.K. Chakraborty said, "We provide search services, workshops and training, compilation of union catalogues and CD-based services available in Indian libraries."

Says FITT Director Dr. A.K. Sengupta : "The National Collection Centre for CD-ROM is a National Information System for Science and Technology (NISSAT) project. We hope that the government will pass a legislation making it mandatory for all CD-ROM producers to deposit their products at IIT." Presently the Centre purchases CDs from the funds provided by NISSAT. "There is a boom in the CD market," says Dr. Sengupta. "We have made a modest beginning and are yet to buy many more CDs to keep up with the new trends in the market."

CIEFL Workshops

The Central Institute of English and Foreign Languages, Hyderabad is launching a series of short intensive workshops on communication skills from July 1.

The workshops are aimed at professionals and postgraduates to improve their presentations, letter writing, e-mail, reports, technical and general documents etc. They will also cover communication strategies, business writing, presentations and office communication.

Sample Papers Workshop

A One Week Workshop was recently organized by the Regional Institute of English (RIE), Chandigarh in collaboration with the English Department of Panjab University to prepare sample papers for the modified syllabus of the B.A. Functional English Course. The modified syllabus was introduced in 1998-99. The purpose of the workshop was to provide both direction and insight into the teaching and testing of this vocational stream subject (Functional English) through preparing a set of sample papers which would be useful to both teachers and students of the universities in the region.

A team of thirteen lecturers representing various colleges of different universities in the region, worked under the guidance of the faculty of RIE & Panjab University coordinated by Ms. Harjit Vasudev, Director, RIE and Dr. Pushpinder Syal, Chairman, English Deptt. Panjab University in preparing papers for Business Communication and Writing & Study Skills, Speech Skills, Media papers relating to Radio, TV, and Print Journalism, Entrepreneurship Development and On-the-Job Training papers. Sample Papers for the entire course (B.A. I, II, III) were prepared during the workshop.

Expanding Technical Education in Haryana

The Haryana Government has earmarked a sum of Rs. 70 crores for the expansion of technical education in the State during the current financial year.

Mr. Narain Singh, the Technical Education Minister, said a World Bank-aided programme of Rs. 160 crores was being implemented to introduce new technical courses and modernise the existing courses in the polytechnics. The programme would include expansion of technical education for women and modernising of laboratories besides maintaining liaison with industries in the State.

He said 12 new engineering colleges were set up under a self-financing scheme during the last three years and there was a plan to open four new institutions during the current financial year. As a result the intake capacity of students would be raised from 3,700 to 4,220 in the degree level. He said the state government also had a plan to set up one Government polytechnic in every district of the state.

He said a four year diploma course in industrial and instrument technology had been started at P.D. Memorial Polytechnic, Sarai Aurangabad in district Jhajjar with the allocation of 40 seats. Besides this, a two-year diploma course in Medical Lab Technology had also been started at Gandhi Pharmacy College, Karnal with an intake capacity of 30 students.

The Minister said the state government had decided to reserve 10 per cent seats in the four engineering colleges, namely Chhotu Ram State College of Engineering, Murthal; Vaish College of Engineering, Rohtak; M.M. Engineering, College, Mullana; and M.L. Institute of Engineering and Technology, Raduar; under lateral entry scheme for diploma holders.

Mr. Singh said that under the direct central assistance scheme, community development centres had been established in 14 polytechnics with the objective of imparting job-oriented training to the unemployed rural youth for taking up self employment.

Internet for Sociological Research

On an invitation from the Institute for Sociology of Albert Ludwig University in Germany, the Centre for the Study of Social Systems (CSSS) at Jawaharlal Nehru University's School of Social Sciences has joined an international project using Internet for sociological research.

By doing so, CSSS has found a berth in the virtual classroom that already has similar institutes from Sussex in the United Kingdom and Wroclaw University in Poland.

As a result of this venture, the study of sociology has been made available on the Internet through websites, virtual classrooms, seminar settings and online exchange between students and teachers.

The creation of the virtual classroom through the use of the information highway would help bridge distances that have acted as a deterrent in academic exchange.

This would reduce the information gap and knowledge limits by making available eminent sociologists from different universities to the students learning this subject across the world.

A number of seminars sessions, chat groups and other academic exchanges have already taken place between the students of JNU and the Institute of Sociology in Germany.

The Bioinformatics Centre (BIC) of JNU had been utilized for sending text of papers, video mail and online exchanges.

It has also been conducting joint seminars and workshops involving students from JNU and the German university.

Though the method of distant learning has been in practice in the open university system, it lacks virtual classroom facilities and online interaction with scholars and between students themselves.

Such virtual classrooms which facilitate lectures, article and text transmission besides one-to-one interaction between people separated by oceans seek to plug the gaps in distance learning.

Gujral is Urdu Varsity Chancellor

The former Prime Minister, Mr. I.K. Gujral, has been appointed the first Chancellor of the Maulana Azad National Urdu University, Hyderabad.

His appointment was made by the President, Mr. K.R. Narayanan, in his capacity as the Visitor of the university, according to the Vice-Chancellor, Prof. M. Shamim Jairajpuri.

Mr. Gujral is known for his love for Urdu language and had earlier chaired a Committee on development of Urdu language in the country. The establishment of Urdu University was one of the recommendations of that committee.

Website on Karnataka Medical Colleges

A new website that has detailed information on fee structures, mode of selection, eligibility criteria about medical, dental, pharmacy, physiotherapy and nursing colleges in the State was recently launched by Minister of State for Medical Education.

The site — http://www.dme-karnataka.com — created by the Directorate of Medical Education will provide information on various colleges, availability of seats, fee structure and other details.

Speaking on the occasion, Dr. Naik said that with the website, parents and students will be able to find details about colleges before seeking admission.

Distance Education in Kurukshetra University

The students of distance education courses are no more disadvantageous students as is revealed in an analytical study of results of various University examinations of Kurukshetra University conducted during the year 1998. The distance education students of the Directorate of Correspondence Courses of Kurukshetra University have excelled in almost all the examinations.

The Kurukshetra University has a strong distance education unit where about 25,000 students have been enrolled in 56 classes of traditional courses of B.A., B.Com., M.A., M.Com. and professional diploma and degree courses in the field of Computer, Management, Tourism, Library Science, etc in the Directorate of Correspondence Courses during the current academic session 1998-99. The distance education students appear with identical syllabi and same question papers as are meant for the regular students from different examination centres created by the University at the Univesity campus.

Dr. M.L. Ranga, the Vice-Chancellor of Kurukshetra University attributes the success of distance education students to the regular supply of quality study material, and regular and effective short Personal Contact Programmes. Mr. L.C. Gupta, Director, Correspondence Courses, revealed that the duration of the Personal Contact Programmes had recently been enhanced from 7 days to 10-15 days. Library facilities and Students Support Services had also been strengthened. Arrangements have been made to ensure that the response sheets/assignments received from the students are promptly returned to them after evaluation with comments by the teacher-experts. Intensive Personal Contact Programmes of Practical component of the courses are also conducted. Presence of students in Personal Contact Programmes had been made mandatory in the case of Professional Courses. Eminent expert-teachers are invited to interact with the students in the Personal Contact Programmes so that problems of students on specific topics are solved.

Polish Government Scholarships-1999-2000

The Polish Government offers following scholarships to Indian nationals for session 1999-2000. One scholarship for doctoral studies in the field of the Polish Language and Culture, or two scholarships each for the duration of two years, for the diploma courses in the Polish Language and Culture (duration 2-3 years).

Candidates should be nominated by the Department of Slavonic and Ugro-Finn Studies, University of Delhi.

The more scholarships for doctoral studies in Mining Technology (3 years duration).

Candidates should have uniformally good academic record with 60% or above marks (no rounding off) in the subject concerned at the required level i.e. M.A. or M.Sc. degree; and currently employed by a recognised educational institution in India.

Value of the scholarship is Monthly Scholarship of 529, 00 zl per month for students up to M.A. Degree, and 975, 00 zl per month for Research Scholars upto Ph.D.

For application forms and further details, please contact S.O. (ES. 1) Ministry of Human Resource Development, Department of Education, External Scholarships Division, A. 1/W. 3, Curzon Road Barracks, Kasturba Gandhi Marg, New Delhi-110 001.

Last date for receipt of applications is 22 July, 1999.

Jaina Pallis of South India

A three day UGC sponsored national conference on Jaina Pallis of South India was recently organised by the Department of History Philosophy of the Periyar EVR College (Autonomous), Tiruchirapalli. 168 scholars from all over the countries attended the conference.

Jainism which has flourished in the Northern part of India, has penetrated even into the extreme South of India and left the remnants of its presence in the form of Pallis, Pazhis, caves, inscriptions and copper plates and literary works. Even the literatures of the regional languages bear ample testimony to the influence of Jainism on the peoples' life.

The objectives of the conference were (1) to propagate the ideals of Jainism such as Ahimsa (Non-violence) and Jaina view of life and Jainology; and (2) to help the young professors and research scholars, PG Students and enlightened inellectuals to inculcate better understanding of the Jaina religion and philosophy.

Papers were presented on the following topics : (1) Emergence of Jainism in South India, (2) Rise and fall of Jainism in this region, (3) Jaina contribution to regional literature (Tamil, Kannada, Telugu and Malayalam, (4) The role of Ahimsa (non-violence) in spreading Jainism, (5) The concept of Destiny in Jainism with special reference to Jain literature (Tamil and etc), (6) The Role of Royal patronage and its by-product Jaina art and architecture, (7) Inscriptions of Jaina Pallis of South India, (8) Jaina Pallis of different regions of South India — a critical study, (9) Jaina Pallis as gleaned from Tamil Literature, (10) Jaina Pallis as gleaned from Sanskrit and Pali, (11) The Art and Architectural style of Jaina Palli's and Temples, and (12) Jaina contribution to Tamil Literature.

Mr. S. Kadirvelu directed the conference deliberations.

No Tie Up with APTECH : IGNOU

The Indira Gandhi National Open University (IGNOU) has reiterated that its partnership arrangement with the computer training institute, APTECH, had been terminated.

As a result of the termination of the partnership, APTECH no longer has the right to conduct any of the IGNOU's computer programmes which includes in MCA, BCA and CIC.

In a statement recently, IGNOU has condemned the misleading publicity campaign of APTECH which claimed to be a partner institute of the open university.

The university has urged students seeking admission to IGNOU's computer programmes not to be misled by APTECH's publicity.

News from Agricultural Universities

NAAS Foundation Day

With the focus of developed countries on protection of their new scientific and technological advancements and increasing involvement of the private sector in upstream science, the spectre of a scientific apartheid looms large on the world, according to the eminent agriculture scientist Dr. Ismail Serageldin, Vice President (Special Programmes) of the World Bank.

Delivering the fourth Foundation Day Lecture of the National Academy of Agricultural Sciences (NAAS) on "The New Biological Century : Promises and Perils", in New Delhi recently. Dr. Serageldin said heavy investments in biotechnology — 8.9 billion dollars a year in the United States — are being made by the private sector, and many of the agriculture-related breakthroughs had occurred within a proprietary science regime.

The outcome of these efforts, both in terms of products and processes, are protected by extensive patent laws. Moreover, the rules of the game — of sharing knowledge, products, processes, genes and germplasm — are largely being defined in the American courts of law with a strong focus on protection of intellectual property rights, he said.

This along with increasing private sector involvement in upstream science is raising the spectre of a scientific apartheid where developing countries run the risk of potentially being locked out of the key benefits of modern science, Dr. Serageldin cautioned.

Drawing the attention of agriculture scientists to enormous public and private resources being devoted to human bio-medical and bio-technological research in industrialised countries, he suggested building partnerships between researchers of developing and developed countries to harness the best of science for the benefit of the poor and the environment.

He further said equal partnership was essential for successfully addressing formidable development challenges facing the humanity.

The new life science does hold tremendous promise; however, in the absence of partnership and the continuing privatisation of upstream science in the industrialised countries and the lack of access for developing countries' researchers lay the perils of a scientific apartheid in the next Century, he said.

AIU NEWS

AIU-AVCC Tie Up

The Association of Indian Universities (AIU) and the Australian Vice-Chancellors' Committee (AVCC) have agreed to promote co-operation which will advance university teaching, research, scholarship and management in their member institutions. All member institutions of the Association & the Committee are eligible for consideration as participants in the program of co-operative activities.

Co-operation will involve the following areas :

- information sharing
- staff and student exchanges
- mutual recognition of qualifications
- staff development
- researcher exchange programs
- university management.

Further areas for co-operation may be agreed upon from time to time.

To implement this agreement a Joint Working Group shall consider and approve the program of activities for co-operation under the agreement. Meetings of the Joint Working Group shall be held alternately in India and Australia. This agreement is valid for 3 years in the first instance.

(Contd. from page 20)

80 patents or so on Neem, 28 patents do belong to Indians! Many interesting examples of creating economic wealth out of synergy of our intellectual prowess, rich biodiversity and the ethnomedicinal and ethnobotanical knowledge base are emerging.

I must hasten to add that there are deep issues involved about the role of indigenous communities in conservation and sustainable use of biodiversity and sharing of the benefits flowing from commercial uses of these resources. These need to be discussed. A link between the formal system of innovation (in our laboratories) and informal systems of innovation (in our villages) needs to be established. Reliable and accessible biodiversity information systems is the need of the hour too. To retain the wealth of practical ecological knowledge of the village folk will require innovative approaches. I am convinced that a promotional and progressive rather than a negative and restrictive approach will go a long way for the nation as a whole.

I view India's future with great optimism and hope. I believe that the twenty first century will belong to Asia and India will have a chance to lead. I believe that India will be counted among the top economic powers of the world by 2020. I also believe that India will be an intellectual capital of the world by then. The only major difference will be that by then, we will not just pride ourselves as a nation which has not only learnt on how to do science that will lead and not follow but also as a nation that leads the rest of the world in making the most innovative economic sense of the science it does. That should be India of our dreams. ❑

BOOK REVIEW

An Excellent Contribution

B.B. Dhar*

Lamont C. Hempel. Environmental Governance : The Global Challenge New Delhi, Affiliated East West Press, 1998. Pp. xviii+291. Rs. 125/- (Paperback).

The twentieth century witnessed the abuse and misuse of nature's wealth — the environment and ecology, the global impact of which is bound to be felt in the next millennium. The global conferences, the Earth Summit in 1992, and the Cairo Conference on Population, 1994 are the two most important focusing events for global environmental action plans.

The subject in general and its impact in particular has received wide attention the world over, but hardly any serious attempt has been made to discuss the issue of Environmental Governance — which is going to be one of the biggest challenges for the next millennium. The author of this book therefore, needs to be complimented for his concern, and to have conceived the idea of global society, based on the themes of ecological literacy, sustainable development and "earthkeeping" policies.

The book is an excellent document, where the author has attempted to highlight both the causes of environmental destruction (chapter three) and issues of Earth Summit (chapter two). The issues like global warming, the changing climate, (chapter four) the impact of greenhouse gases and associated policy issues have been well discussed and documented. In this chapter the author has also argued the importance of disagreements that have kept the scientists debating the importance of greenhouse gases and their impact on global warming. The arguments have been traced back to human causes that have contributed to global warming. The chapter also discusses policy response options — a must to restrict its impact on humans.

Chapter five in fact should be of real interest to the policy makers of future, where the problem has been explained with the help of models that could lead to international environmental policy making process. The concept of political ecology discussed in chapter six is well established on the basis of conventional political economy and the right of the nations, that are free to declare a sovereign right to transform that portion of nature that lies within their territories into resources for consumption or trade. The term "Supranational Governance" and its prospects has been introduced in this chapter, perhaps to ensure that the individual environmental programmes of individual states can be protected without threatening their sovereign claims. The issue of UN's loose form of world confederation has also been referred to in the same context of political ecology — a new process that could protect global environment on a uniform basis. Chapter seven on political economy attempts to suggest ways and means to which economics and policies can together contribute in environmental governance. The author has not ignored the ethical part of the nature and has therefore, deliberated about the issue in chapter eight, to suggest alternative norms that could be applied cross-culturally the world over to achieve a society that can meet legal and political framework for making environmental policy depend on such values. This undoubtedly will have to have agreements by bringing together the conflicting norms existing in various nations. The author has backed his arguments by referring to "Common Heritage", "Common Equity"; "Common Security" and "Deliberative Democracy", with an "ultimate aim to succeed in reforming the policies and instructions that govern the world in time to prevent most of the planets' ecological wealth from being squandered", this indeed is loud thinking.

The last chapter of the book does make references to the benefits and improvements that can be derived from technological advances together with the risks of progress and the role of optimizers in the context of changes in global environment and such other options, with the aim to achieve sustainable future and better earthkeeping.

In short the book is an excellent contribution to the concept, and makes a good reading particularly for those who are committed to the betterment of environment, locally and globally. ❑

**Director (Research), Association of Indian Universities, 16 Kotla Marg, New Delhi-110 002.*

UNIVERSITY OF DELHI

Advt. No. Estab. IV/161/99 **Dated : June 15, 1999**

Applications on the prescribed forms are invited for the following posts in various Departments of the University so as to reach **the Registrar, University of Delhi, Delhi-110 007 latest by 22nd July, 1999.**

S. No. Department / Post / No. of Vacancies / Reservation / Specialisation./ Desirable Qualifications, if any

1. **Arabic** *Reader (1),* 1. Specialisation in Classical Arabic Literature (Based education); 2. Well versed in Islamic Sciences (Hadith, Tafseer etc.); 3. Acquaintance with the Indo-Arab Literature; 4. Capable of teaching in Arabic and English.
2. **Botany** *Reader (3),* First Post-Mycology and Plant Pathology. Second Post-Ecology/Taxonomy. Third Post-Open. *Research Associate (3)*
3. **Chinese & Japanese Studies** *Lecturer (1)* (Japanese Language) (SC). 1. Should have cleared level 1 examination in Japanese Language Proficiency Test conducted by the Japan Foundation; 2. Should have experience in teaching Japanese Language using Audio-Visual Method.
4. **Dr. B.R. Ambedkar Center for Biomedical Research** *Professor (1)* (Prof. Gurbakhsh Singh Chair), *Lecturer (2), Research Associate (2).* Specialisation for all the posts : Synthetic Organic/Peptide/ Synthesis/Lipids/Bio-Organic Chemistry / Microbiology /Biochemistry / Cell Biology / Toxicology /Human Physiology / Biotechnology / Medicinal Chemistry / Clinical Chemistry / Medical Biochemistry /Reproductive Endocrinology /Bio-Inorganic Chemistry / Pharmaceutics / Bio-Statistics.
5. **English** *Professor (1), Reader (2)*
6. **Geology** *Professor (1), Reader (1)* Specialisation : 1. Crystallography and Mineralogy, 2. Structural Geology.
7. **Hindi** *Professor (1), Reader (6), Lecturer (1)* (SC).
8. **Management Studies** *Reader (1)* Specialisation : Production & Operations Management; Human Resource Management; Organisational Behaviour; Marketing; Managerial Economics; Strategic Management; International Business Management.
9. **Mathematics** *Reader (1).*
10. **Physics & Astro-Physics** *Reader (1), Lecturer (1).*

Applications are also invited for the following posts which had been advertised earlier in the advertisement nos. shown hereunder. Persons who have applied earlier need not apply again. However, applications received earlier will be screened according to the revised essential qualifications:

Ref.: Advt. No. Estab. IV/153/97 dated 17.06.97

1. **Education** *Lecturer (1)* (Sociology) (SC), *Lecturer (1)* (Commerce) (ST), *Lecturer (1)* (Biological Science) (SC).
2. **Germanic & Romance Studies** *Lecturer (1)* (Italian) (ST), M.A. or M.Phil in Italian/Italian Literature. *Lecturer (1)* (Swedish) (SC), M.A. or M. Phil in Swedish with specialisation in Swedish Literature.
3. **History** *Lecturer (1)* (SC), History of East Asia.
4. **Law** i) Campus Law Centre, *Lecturer (1)* (SC). ii) Law Centre-I, *Lecturer (1)* (SC).
5. **Sanskrit** *Lecturer (1) (Poetics) (SC).*
6. **Zoology** *Lecturer (1)* (SC), *Entomology/Reproductive Physiology/Cell & Developmental Biology/Biological Chemistry.*

Ref.: Advt. No. Estab. IV/154/97 dated 13.10.97

1. **African Studies** *Reader (1) (Sociology), Lecturer (1)* (History), *Lecturer (1)* (Geography). *For all the 3 posts, desirable qualifications:*
   a) Specialisation in African Sociology/ History/Geography as the case may be;
   b) Field work experience in Africa or visiting assignment at an African University; and
   c) Knowledge of an African Language.
2. **Anthropology** *Professor (1) (Physical Anthropology). Any branch in Physical Anthropology.*
3. **Botany** *Professor (2).*
4. **Chinese & Japanese Studies** *Reader (1), Lecturer (1).* For both the posts : Chinese Language and Literature.
5. **English** *Reader (1)* (North Campus), *Reader (2)* (South Campus), *Lecturer (1)* (North Campus).
6. **Geography** *Professor (1), Reader (2).*
7. **History** *Reader (1).* Specialisation in Modern Indian History.
8. **Law** - Campus Law Centre, *Reader (2).*
9. **Linguistics** *Reader (1).* Specialisation in "Sociolinguistics with a good background in the theoretical linguistics and language teaching"
10. **Modern Indian Languages & Literary Studies** *Lecturer (1)* (Tamil). Specialisation in Comparative Literature.
11. **Political Science** *Lecturer (1).* Specialisation in Political Theory. *Lecturer (1)* (SC), Specialisation in Modern Indian Political thought.
12. **Physics & Astro-Physics** *Reader (1), Lecturer (4)* (SC-1, ST-1).
13. **Sanskrit** *Lecturer (1).*
14. **Urdu** *Lecturer (2)* (SC-1).

Ref.: Advt. No. Estab. IV/155/97 dated 17.11.97

1. **Chinese & Japanese Studies** *Professor (1)* (Chinese Studies).
2. **Operational Research** *Lecturer (1).* The Knowledge of Computer Languages and Applications to Operational Research.
3. **Physics & Astro-Physics** *Professor (1), Reader (2).*

Ref.: Advt. No. Estab. IV/157/98 dated 24.02.98

1. **Anthropology** *Reader (1)* (Physical Anthropology). Any branch of Physical Anthropology.
2. **Law** i) Campus Law Centre, *Reader (2), Lecturer (2) Part-time Lecturer* (5) (SC-1, ST-1). ii) Law Center-I, *Lecturer (2), Part-time Lecturer (5)* (SC-1, ST-1). Part-time Lecturers are expected to teach the procedural subjects as well as substantive courses. iii) Law Centre-II, *Part-time Lecturers (4,* (SC-1, ST-1).
3. **Modern Indian Languages & Literary Studies** *Lecturer (2)* (1 in Tamil and (1 in Telugu (SC)). Tamil : Specialisation in Folklore in Tamil. Desirable Knowledge of additional Indian language other than Tamil Telugu : Specialisation in some work in the field of Comparative India Literature. Desirable : Knowledge of additional Indian Language other tha Telugu.
4. **Physics & Astro-Physics** *Professor (1), Reader (1).*
5. **Sociology** *Lecturer (1)* (SC).

Ref.: Advt. No. Estab. IV/158/98 dated 27.08.98

1. **Buddhist Studies** *Reader (2).* First Post : Specialisation in Buddhism Far East/East Asia. Desirable qualifications : a) M.A. in Buddhist Studies an equivalent degree with atleast 4 papers on Far Eastern/East Asia Buddhism and language of the concerned country. b) Advance diploma University of Delhi or equivalent in one of the languages of Far Easter East Asian countries. c) Evidence of proficiency to consult the original sourc on Buddhism of the concerned countries. Second Post : Specialisation Buddhist Philosophy. Desirable qualifications : M.A. or an equivalent degr in Buddhist Studies with atleast 4 papers in Buddhist Philosophy.
   Lecturer (2) (SC-1). First Post : Specialisation in Sanskrit based Buddhis Desirable qualifications ; a) M.A or an equivalent degree in Buddhist Stud with atleast 4 papers in Sanskrit based Buddhism. b) A post graduate diplo or equivalent degree with atleast one paper on Ancient Indian Epigrap Second Post (SC) : *Specialisation in Tibetan language and literatu* Desirable qualifications : M.A. or an equivalent degree in Buddhist Stud with atleast 4 papers on Classical Tibetan language and Tibetan Budd Literature.
2. **Botany** *Professor (1), Reader (1).* Research output of high standing.
3. **Chinese & Japanese Studies** *Professor (1)* (Japanese History). Mod Japanese History.
4. **Commerce** *Reader (2).* First Post : Human Resource Development incluc organisation theory, Organisational behaviour and Strategic Managem Second Post (Open).
5. **Economics** *Reader (6).*
6. **Law** i) Law Centre-I, *Professor (2), Reader (1), Lecturer (1)* (ST) ii) Centre-II, *Reader (1), Lecturer (3)* (SC-1). For one unreserved p *knowledge of tax laws and international laws.*
7. **Mathematics** *Reader (1).* Fluid Dynamics/Differential Equati *Lecturer (1).*
8. **Modern Indian Languages & Literary Studies** *Reader (3)* (one ea Bengali, Gujrati & Kannada). For Gujrati & Kannada, Comparative Liter and knowledge of an additional Indian language. For Bengali, Compar *Literature or Comparative Indian Literature. Lecturer (1)* (Malayalam) Language teaching/knowledge in the field of Comparative Indian Litera
9. **Music** *Professor (2)* (one each in Hindustani Music and Karnatak M *Reader (2)* (one each in Hindustani Instrumental & Hindustani V *Lecturer (3)* (ST-1, SC-1) (One in Hindustani Music, Vocal) (ST) (T Karnatak Music, Vocal) (SC-1).
10. **Political Science** *Professor (1),* Political Theory/Indian Political Thou
11. **Punjabi** *Professor (1), Reader (1).*
12. **Social Work** *Professor (1),* Specialisation : Field of social work; Met social work; and Social work research. *Reader (2),* Community organi and Community development/field of Social Work/ Social Work Res and Statistics/Social Legislation and Social Security/Ecology and D Management/Adult Education and Women's Studies.
13. **Sociology** *Professor (1), Reader (2).*
14. **Statistics** *Professor (1).*

[illegible] JUNE 28, 1999

Urdu *Lecturer (2)* (ST-1). First Post (ST) : "Classical Poetry" (17th & 18th Century A.D.). Second Post : "Classical Prose" (17th & 18th Century A.D.).

.: Estab. IV/Advt. No. 159/98 dated 06.11.1998

Botany *Readers (4).* Algae/Archegoniatae; Microbiology/Genetics/Cytogenetics/Molecular Biology; Plant Physiology and Plant Biochemistry; and Plant Bio-technology/Cell Biology.

Chinese & Japanese Studies *Reader (1).* Experience in teaching Post Graduate classes in Japanese Language & Literature.

Chemistry *Professor (2), Reader (11)* (Inorganic-3, Organic-3, Physical-3 & General-2). Specialisation for posts in Inorganic, Organic & Physical is at M.Sc. level must be Inorganic, Organic & Physical respectively. For Physical Chemistry posts, candidates must also have Mathematics at B.Sc. Level. *Lecturer (2)* (SC-1, ST-1).

Geology *Reader (1).* Geophysics, Igneous Petrology, Engineering Geology, Remote Sensing Geo-energy resources.

Linguistics *Reader (1).* Theoretical linguistics with Recent Developments in Transformational Syntax/computational linguistics. *Lecturer (1)* (SC), Computational linguistics/Syntax.

Management Studies *Reader (1).* Organisational Behaviour, Human Resource Management; Marketing. *Lecturer (7)* (SC-1, ST-1) (For North Campus), Computers and MIS, Managerial Economics & International Business Environment; Business Communication; Advertising & Sales Management; Production & Operations Management; Health Care Administration; Business Law & Corporate Taxation; Strategic Management. *Lecturer (1)* (SC) (For South Campus), Computer & MIS.

Philosophy *Reader (1).*

Psychology *Reader (1).* Organisational Behaviour/Developmental Psychology.

Sanskrit *Reader (1)* (Epigraphy).

Social Work *Lecturer (2)* (ST-1). Integrated Social Work Method; Social Welfare Administration; Ecology and Social Work, Social Work with special Groups, Social Case Work.

Urdu *Professor (1)* (Criticism).

Zoology *Professor (3).* Cell & Molecular Biology/Insect Taxonomy / Limnology / Insect Behaviour. *Reader (2),* Animal Physiology & Bio-chemistry/ Immunology / Developmental Biology / Endocrinology / Fish Biology.

parate application is required for each post. For post meant for South mpus, separate filled in application be sent to the Deputy Registrar, versity of Delhi South Campus, Benito Jaurez Road, New Delhi-110021.

LE OF PAY

fessor - **Rs.16400-450-20900-500-22400**

der - **Rs.12000-420-18300**

turer - **Rs.8000-275-13500**

earch Associate - (A) Rs.8,000/- (Fixed), (B) Rs.8,800/- (Fixed), Rs.10,500/- (Fixed), [In one of the grades depending on the ommendations of the Selection Committee].

he above posts, except that of Research Associate, carry DA, CCA, HRA as admissible under the rules in force in the University from to time.

= Scheduled Caste

= Scheduled Tribe

SENTIAL QUALIFICATIONS :

fessor : An eminent scholar with published work of high quality actively aged in research with 10 years of experience in post-graduate teaching and/ ost-doctoral research at the University/National level Institutions, including erience of guiding research at doctoral level.

OR

utstanding scholar with established reputation who has made significant ribution to knowledge.

xceptional cases candidates with 15 years of under-graduate teaching/ arch experience could also be considered.

der (Except Management Studies) : Good academic record with a doctoral ree or equivalent published work. In addition to these, candidates who join outside the University System shall also possess atleast 55% of marks or quivalent grade of 'B' in the seven point scale with letter grade O, A, B, C, D, F at the Master's degree level.

years of experience of teaching under-graduate/post-graduate classes and/ esearch excluding the period spent for obtaining the research degrees and made some mark in the areas of scholarship as evidenced by quality of lications, contribution to educational innovation, design of new courses and icula.

der (Management Studies) : Good academic record with atleast second class ster's Degree in a relevant subject with a doctoral degree or equivalent lished work. Evidence of being actively engaged in (i) research, or nnovation in teaching methods or (iii) production of teaching materials.

Five years experience of teaching in under-graduate/post-graduate classes and/ or post-doctoral research work with evidence of published work.

Note : Second class would mean atleast 50% marks in the subject or equivalent grade.

Lecturer (Except Management Studies and Music) : Good academic record with atleast 55% of marks (50% for candidates belonging to SC/ST or those who passed their Master's degree prior to 19.09.1991 and hold a Ph.D. degree) or an equivalent grade in the seven point scale with letter grade O, A, B, C, D, E & F at the Master's degree level in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Candidates who do not hold a Ph.D. degree should have cleared the National Eligibility Test (NET) conducted by the UGC, CSIR or similar test accredited by the UGC.

Provided that the University may make any relaxation in the above qualifications with the prior approval of the University Grants Commission.

Lecturer (Management Studies) : A Master's degree in Business Administration or M.Tech. in Engineering with first class with the provision that the incumbent would acquire a doctorate degree within a period of ten years.

In the case of allied subjects like Industrial Psychology, Personnel Management, Business Statistics, Cost Accountancy etc. where Lecturers are required to be recruited with qualifications other than M.B.A. or M.Tech, the minimum qualifications shall be same as prescribed for the Faculties of Arts, Social Sciences including Commerce and Sciences.

Lecturer (Music) : Good academic record with atleast 55% of marks (50% for candidates belonging to SC/ST or those who passed their Master's degree prior to 19.09.1991 and hold a Ph.D. degree) or an equivalent grade in the seven point scale with letter grade O, A, B, C, D, E & F at the Master's degree level in a relevant subject from an Indian University or an equivalent degree from a foreign University.

Candidates who do not hold a Ph.D. degree should also have cleared the National Eligibility Test (NET) conducted by the UGC, CSIR or similar test accredited by the University Grants Commission.

Provided that the University may make any relaxation in the above qualifications with the prior approval of the University Grants Commission.

OR

A traditional or a professional artist with a highly commendable professional achievement in the subject concerned.

Research Associate : Consistently good academic record with 1st or high 2nd class (B+) Master's degree or an equivalent degree from a foreign University in the subject concerned.

Note : The appointment will be (on a tenure basis) for a period of one year in the first instance. The tenure may be extended further on year to year basis upto a period of 3 years, extendable further by another two years only. In no case the tenure will be extendable beyond 5 years in all.

Part-time Lecturer in Law : 1. a) at least a Bachelor's degree in Law with not less than 50% marks or equivalent grade-point average; and b) not less than five years of actual practice as a lawyer at the High Court level. 2. Part-time lecturers in law shall teach at least nine periods. 3. Part-time lecturers in Law shall be paid a monthly honorarium of Rs. 2,500/- p.m.

Application forms for the above posts can be had from the Establishment Branch-IV (Room No. 205), New Administrative Block, University of Delhi, Delhi-110007 during working days (from 9.30 a.m. to 12.30 p.m. and 2.00 p.m. to 5.00 p.m.) either personally or by sending a self addressed & postage stamped envelope worth Rs.22/- (Size 13 cms. X 28 cms.).

APPLICATION FEE :

Application fee of Rs.100/- (Rs. 25/- in case of SC/ST) (Non-refundable) for each post in the form of Indian Postal Order/Bank Draft drawn in favour of the Registrar, University of Delhi payable at Delhi/New Delhi is required to be submitted alongwith the application form. Candidates must write their name and post applied for on the backside of the Indian Postal Order / Bank Draft.

NOTE :

1. It will be open to the University to consider names of suitable candidates who may not have applied;
2. Number of posts is given within parenthesis against each post;
3. University reserves the right not to fill up any of the vacancies advertised if the circumstances so warrant;
4. Relaxation of any of the qualifications may be made in exceptional cases on the recommendations of the Selection Committee;
5. For Professor and Reader, other things being equal, preference will be given to SC/ST candidates;
6. 3% posts of Lecturers are reserved for Physically handicapped candidates.

K. K. PANDA
REGISTRAR

THESES OF THE MONTH

A list of doctoral theses accepted by Indian Universities (April - May 1999)

HUMANITIES

Fine Arts

Music

1. Sima Rani. **Madhyayugeen sangit per dharmik sampradayon, samajik tatha sanskritik pristhitiyon ka prabhav: Ek adhyayan.** (Dr Bharti Sharma), Department of Music, Maharshi Dayanand University, Rohtak.

Geography

1. Bhaskara Rao, Chegondi Udaya. **Quarternary evolution and environmental degradation of coastal sediments of Visakhapatnam, East Coast of India.** (Dr K Nageswara Rao), Department of Geography, Andhra University, Waltair.

2. Sharma, Summi. **demographic dimension of quality of life in an urban setting : A case study of Rohtak City in Haryana.** (Dr R B Bhagat), Department of Geography, Maharshi Dayanand University, Rohtak.

3. Tannu. **Integrated Rural Area Development and Planning : A case study of Tehsil Meham, Rohtak.** (Dr S H Ansari), Department of Geography, Maharshi Dayanand University, Rohtak.

History

1. Ashok Kumar. **Study of later Kushna coins.** (Dr Man Mohan Kumar), Department of History, Maharshi Dayanand University, Rohtak.

2. Bhosale, Madhuri. **Raghogarh chitra shaili ka sameekshatmak adhyayan.** (Dr Susheela Pant), Department of Ancient Indian History, Culture and Archaeology, Vikram University, Ujjain.

3. Gogoi, Gunin. **Impact of oil industry on urban growth of Duliajan : A case study in historical perspective.** (Prof S K Basu), Department of History, Dibrugarh University, Dibrugarh.

4. Kataria, Rajiv. **Digvijaya in Ancient India.** (Dr Amar Singh), Department of History, Maharshi Dayanand University, Rohtak.

5. Mishra Haldhar, Siya Ram. **Life and conditions of the people of India and Ceylon as depicted in Buddhist literature, C-300 BC to 600 AD : A comparative study.** (Prof Neelima Dahiya), Department of History, Maharshi Dayanand University, Rohtak.

6. Nigam, Lalita. **Poorva madhyakaleen Malwa ke samajik jeewan mein nari kee bhumika.** (Dr Trivedi Ashok), Department of Ancient Indian History, Culture and Archaeology, Vikram University, Ujjain.

7. Singh, Poonam. **Swami Vivekananda and Ramakrishna Mission through the pages of history.** Department of History, Vinoba Bhave University, Hazaribag.

Language & Literature

English

1. Anar Singh. **Social consciousness in the novels of R K Narayan with special reference to the Guide Swami and Friends, The Dark Room and the Bachelor of Arts.** (Prof M K Bhatnagar), Department of English, Maharshi Dayanand University, Rohtak.

2. Gurudev, Sujata. **The song of man: The humanistic perspective in the writings of Emerson, Hawthorne Melville and Whitman.** (Prof E N Lall), Department of English, North Eastern Hill University, Shillong.

3. Hooda, Jaibir Singh. **James Baldwin's code : A study of his fiction.** (Dr S P S Dahiya), Department of English, Maharshi Dayanand University, Rohtak.

4. Mohapatra, Jyotirmayee. **Feminism and targetted fiction.** (Dr B K Tripathy), Department of English, Utkal University, Bhubaneswar.

5. Rana, Randeep. **The politics of post modern fiction : A reassessment of Salman Rushdie's fiction.** (Dr Sudhir Kumar), Department of English, Maharshi Dayanand University, Rohtak.

6. Saini, Narinder Kumar. **Henry James short novels : A study in human relationship.** (Dr N K Rattan), Department of English, Maharshi Dayanand University, Rohtak.

7. Tiwari, Sunita. **The novels of Anita Desai : A thematic study.** (Dr A K Khare), Department of English, Guru Ghasidas University, Bilaspur.

8. Yadav, Veena. **Evolution of moral consciousness and social concern in the novels of Soul Bellow.** (Dr R K Sharma), Department of English, Maharshi Dayanand University, Rohtak.

Hindi

1. Kamlesh Kumari. **Sumitra Nandan Pant: Kavya ke vividh sopan aur unka mulyankan.** (Dr Harish Chander Verma), Department of Hindi, Maharshi Dayanand University, Rohtak.

2. Madhukar, Deshmukh Deelip. **Pt. Vidyanivas Mishra ke nibandon mein vyakt samaj evam sanskriti.** (Dr M G Saraph), Department of Hindi, North Maharashtra University, Jalgaon.

3. Randhir Singh. **Navjagran kaleen Hindi gadya sahitya mein sudharwadi chetna.** (Dr Rajinder Singh), Department of Hindi, Maharshi Dayanand University, Rohtak.

4. Sangwan, Anhya Ram. **Dr Laxmi Narayan Lal ke natakon mein yug chetna.** (Dr Radha Krishan), Department of Hindi, Maharshi Dayanand University, Rohtak.

5. Sudershan Devi. **Laxmi Narayan Lal ke upanyason ka samaj shastriya adhyayan.** (Dr P M Gaur), Department of Hindi, Maharshi Dayanand University, Rohtak.

6. Sushila. **Pt Partap Narayan Mishra ka sahitya: Kathya aur shilp.** (Dr Rajinder Singh), Department of Hindi, Maharshi Dayanand University, Rohtak.

Kannada

1. Badiger, Mahadev S. **Hosagannada lalit prabhandh sahitya : Vandu adhayan, 1868 to 1970.** (Dr Channana Walikar), Department of Kannada, Gulbarga University, Gulbarga.

Marathi

1. Sharadchandra, Shobha. **Marathiteel gyankosh ani gyankosh rachnashastra.** (Prof M S Wabgaonkar), Department of Marathi, Nagpur University, Nagpur.

2. Vaidya, Manik Tukaram. **Go Ni Dandekar va tyanche pauranik aitihasik va sant vishyak kadambari vangmaya.** (Dr M R Joshi), Department of Marathi, Nagpur University, Nagpur.

Sanskrit

1. Balraj Singh. **Rajadharma as described in the Mahabharata.** (Dr Surender Kumar), Department of Sanskrit, Maharshi Dayanand University, Rohtak.

2. Jha, Bhogendra. **Bhartiya samaj mein sutra sahitya ka yogdan.** (Dr Ravindra Narayan Jha), Department of Sanskrit, Kameshwar Singh Darbhanga Sanskrit University, Darbhanga.

3. Naseri, Mrudula Ulhas. **Ramayanadhishthit Sanskrit natyakritiche chikitsak abhyas.** (Dr Pankaj Chande), Department of Sanskrit, Nagpur University, Nagpur.

4. Shanti Devi. **Samved mein bhakti ka swaroop : Ek anusheelan.** (Dr Ishwar Singh), Department of Sanskrit, Maharshi Dayanand University, Rohtak.

5. Upadhyaya, Narendra Kumar. **Kalidas kaleen samaj evam sanskriti ka dharamshastriya vivechan.** (Dr Sripati Tripathi), Department of Sanskrit, Kameshwar Singh Darbhanga Sanskrit University, Darbhanga.

6. Vaidya, Ram Madhav. **Advait Vedant va Jain darhan granthamadheel ekatma manav darshan.** (Dr S M Ayachit), Department of Sanskrit, Nagpur University, Nagpur.

Urdu

1. Mohd Shafath Ali. **Urdu novelon mein samaji masail.** (Prof Yousuf Sharif Uddin), Department of Urdu, Osmania University, Hyderabad.

2. Nusrath Parveen. **Kutub Shahi Dur kee musnavie mein Tasauf ke Rujanath.** (Dr H H Aqeel Hashmi), Department of Urdu, Osmania University, Hyderabad.

ALAGAPPA UNIVERSITY, KARAIKUDI-630 003
DIRECTORATE OF DISTANCE EDUCATION
ADMISSION NOTIFICATION 1999-2000

Alagappa University — A State University of Government of Tamil Nadu and recognised by the University Grants Commission — invites applications for admission to the following innovative/job-oriented programmes through DISTANCE EDUCATION AND OPEN UNIVERSITY SYSTEM for the academic year 1999-2000.

	Courses	**Eligibility**
	DISTANCE EDUCATION STREAM	
I.	**Under-Graduate Programmes** (3 years)	
1.	Bachelor of Computer Applications	H.S.C./10+2 (with Maths)
2.	*Bachelor of Commerce	H.S.C./10+2
3.	Bachelor of Bank Management	—do—
4.	Bachelor of Corporate Secretaryship	—do—
5.	Bachelor of Business Administration	—do—
6.	B.Litt. (Tamil)	—do—
7.	*B.A. (History)	—do—
8.	B.A. (Public Administration)	—do—
9.	Bachelor of Library & Information Science (One Year)	Any degree
II.	**Post-Graduate Programmes** (2 years)	
10.	Master of Corporate Secretaryship	Any degree
11.	Master of Bank Management	Any degree
12.	Master of Investment Management	Any degree
13.	Master of Marketing Management	Any degree
14.	Master of Finance and Control	Any degree
15.	Master of Women's Studies (Men also eligible)	Any degree
16.	M.A. Child Care & Education	Any degree
17.	M.A. Personnel Management & Industrial Relations	Any degree
18.	M.A. Mass Communication & Journalism	Any degree
19.	M.Com.	Any degree (with Commerce/Accountancy)
20.	M.Sc. (Industrial Mathematics)	B.Sc. Maths
III.	**Diploma Programmes** (2 years)	
21.	Computer Applications (DCA)	H.S.C./10+2
22.	Sales Management	—do—
23.	Labour Laws (One Year)	—do—
IV.	**Advanced Diploma Programmes** (1 year)	
24.	Project Management (ADPM)	Any degree/3 yrs Tech. Dip/Final BE
V.	**P.G. Diploma Programmes** (1 year)	
25.	Computer Applications (PGDCA-18 months)	Any degree
26.	Computer Systems and Management	Any degree
27.	Capital Market & Investment Analysis	Any degree
28.	Personnel Management & Labour Laws	Any degree
29.	Finance and Control	Any degree
30.	Business Management	Any degree
31.	Sports Management	Any degree
32.	Insurance Management	Any degree
33.	Temple Arts (Tamil Medium)	Any degree with Tamil as a Subject
34.	Industrial Water & Waste Water Treatment	Degree in Chemistry
35.	Digital Instrumentation	Degree in Physics
36.	Gerontology and Geriatrics	Any degree

VI. M.Phil. Courses (1 year)	
37. M.Phil. Education	M.Ed.
38. M.Phil. Corporate Secretaryship	MCS/M.Com/MBA

OPEN UNIVERSITY STREAM

Under Graduate Courses (3 years)	**Eligibility**
1. B.Litt. (Tamil)	Age 18 years Completed. Basic qualification not necessary. Admission only after 4 days Preparatory Course and Entrance Test
2. *B.A. (History)	
3. B.A. (Public Administration)	
4. *Bachelor of Commerce	
5. Bachelor of Bank Management	
6. Bachelor of Corporate Secretaryship	
7. Bachelor of Business Administration	

Sl. No. 1 to 3 : Courses offered within Tamil Nadu only.
*These Courses are offered in Tamil Medium also.

Personal Contact Programme & Examination Centres

KARAIKUDI, MADURAI, COIMBATORE, CHENNAI, RAMANATHAPURAM, TRICHY, ERODE, BANGALORE, HYDERABAD, COCHIN, MUMBAI, NEW DELHI, HARDWAR, CUTTACK, UDAIPUR, VARANASI, JAMMU.

OUS Preparatory Course & Entrance Test Centres

KARAIKUDI, MADURAI, COIMBATORE, CHENNAI, RAMANATHAPURAM, TRICHY, ERODE, BANGALORE, MUMBAI, NEW DELHI.

Spot Admission

The candidates may also get provisionally admitted in the following Centres, in person :

(1) Hindu Senior Secondary School 83 Big Street, Chennai-600 005. Phone : 8583312
(2) Sree Baldevdas Kikani Vidyamandir, R.S. Puram, Coimbatore-641 002. Phone : 454733
(3) Cathedral Composite PU College & High School, 63 Richmond Road, Bangalore-560 025. Phone : 5572656
(4) St. Alphanse College of Education, 15A Sidhartha Nagar Colony, Behind Vengal Rao Nagar, Hyderabad-500 038. Phone : 3815902
(5) Delhi Tamil Education Association, Lodi Estate, New Delhi-110 003. Phone : 4698537
(6) Ramniranjan Jhunjhunwala College, Opp Railway Station, Ghatkopar (West), Mumbai-400 086. Phone : 5152731/5151763 (5 p.m. to 7 p.m.)
(7) Centre of Management Studies and Technology, Devnil Building, BHEL Ancillary Estate, Ranipur, Hardwar-249 403 (U.P.) Phone : 426765 & 425678
(8) Kautilya Institute of Management, Muttepadath Building, N.H.-47, Mamangalam, Cochin-682 025. Phone : 337905
(9) Army School, Kaluchak, Gngyal (PO), Jammu-180 010. Phone : 435874 (Extn. 2084)
(10) Institute of Textile Technology, Choudwar, Cuttack, Pin-754 025. Phone : 692217

Cost of Application and Prospectus

Distance Education Courses — Rs. 80/-
Open University Courses — Rs. 60/-

Application Form and prospectus can be had from

The Director, Directorate of Distance Education, Alagappa University, Karaikudi-630 003 in person or by post, and also from the above Spot Admission Centres in person with a requisition mentioning the Name of the Course along with a crossed Demand Draft for the cost of Application and Prospectus drawn in favour of the **Registrar, Alagappa University** payable on any bank at **Karaikudi** with a **self-addressed** envelope (size 28 cm x 20 cm).

Note : (1) Any regular course candidates may also join Diploma/PG Diploma Courses.

(2) For details of PCP Centres refer to Prospectus

Application Forms will be issued from **1st July, 1999**

Last Date for Issue and Receipt of filled-in Applications

Open University Courses : **31st August 1999**
Distance Education Courses : **29th October 1999**

REGISTRAR

UNIVERSITY OF MADRAS

NOTIFICATION

Applications are invited for admission to the following Post-graduate courses and Master of Philosophy courses (Full-Time) under CREDIT BASED SEMESTER SYSTEM (CBSS) in the University Departments of Study and Research and for certain courses not covered under Credit Based Semester System in the Faculty of Medicine for the academic year 1999-2000.

Masters and M.Phil Programmes

SCHOOL OF HISTORICAL STUDIES [CHEPAUK CAMPUS]

M.A. : Ancient History & Archaeology, History
M.Phil : Indian History

SCHOOL OF SOCIAL SCIENCES [CHEPAUK CAMPUS]

M.A. : Anthropology, Criminology and Criminal Justice Science
M.Phil : Anthropology

SCHOOL OF POLITICAL AND INTERNATIONAL STUDIES [CHEPAUK CAMPUS]

M.A. : Public Affairs, Public Management, Defence & Strategic Studies
M.Phil : Public Affairs, Defence & Strategic Studies, South and South East Asian Studies

SCHOOL OF ECONOMICS [CHEPAUK CAMPUS]

M.A. : Economics [Indian Economics], Econometrics
M.Phil : Economics, Development Economics

SCHOOL OF DEVELOPMENT STUDIES [CHEPAUK CAMPUS]

M.A. : Adult and Continuing Education, Communication, Sociology
M.Phil : Education, Psychology, Adult and Continuing Education

SCHOOL OF PHILOSOPHY AND RELIGIOUS THOUGHT [CHEPAUK CAMUPS]

M.A. : Philosophy, Saiva Siddhantha, Vaishnavism, Jainology, Christian Studies
M.Phil : Philosophy, Christian Studies

SCHOOL OF FINE AND PERFORMING ARTS [CHEPAUK CAMPUS]

M.A. : Indian Music
M.Phil : Indian Music

SCHOOL OF ENGLISH AND FOREIGN LANGUAGES [CHEPAUK CAMPUS]

M.A. : English, French
M.Phil : French

SCHOOL OF TAMIL AND OTHER DRAVIDIAN LANGUAGES [MARINA CAMPUS]

M.A. : Tamil Literature & Culture, Tamil Studies, Telugu, Malayalam, Kannada
M.Phil : Tamil Literature & Culture, Tamil Studies, Telugu, Malayalam, Christian Tamil Literature

SCHOOL OF SANSKRIT AND OTHER INDIAN LANGUAGES [MARINA CAMPUS]

M.A. : Sanskrit, Hindi, Arabic & Urdu
M.Phil : Sanskrit, Hindi, Arabic & Urdu

SCHOOL OF BUSINESS AND MANAGEMENT [CHEPAUK CAMUPS]

M.Com. : [Trade and Development]
M.Phil : Commerce

SCHOOL OF MATHEMATICS, STATISTICS, COMPUTER SCIENCE, LIBRARY and INFORMATION SCIENCE [CHEPAUK CAMPUS]

M.Sc. : Mathematics, Statistics and Informatics, Library & Information Science
M.Phil : Mathematics

SCHOOL OF EARTH AND ATMOSPHERIC SCIENCES [CHEPAUK and GUINDY CAMPUSES]

M.Sc. : Applied Geography [CHEPAUK CAMPUS] Geology, Applied Geology [GUINDY CAMPUS]
M.Phil : Geology, Applied Geology [GUINDY CAMPUS]

SCHOOL OF CHEMICAL SCIENCES [GUINDY CAMPUS]

M.Sc. : Analytical Chemistry, Inorganic Chemistry, Organic Chemistry, Physical Chemistry
M.Phil : Analytical Chemistry, Inorganic Chemistry, Organic Chemistry, Physical Chemistry

SCHOOL OF PHYSICAL SCIENCES [GUINDY CAMPUS]

M.Sc. : Physics, Biophysics, Electronics Science
M.Phil : Theoretical Physics, Nuclear Physics, Biophysics

SCHOOL OF LIFE SCIENCES [GUINDY CAMPUS]

M.Sc. : Applied Plant Science, Zoology [Special], Biochemistry, Molecular Biology, Biotechnology
M.Phil : Botany, Zoology, Biochemistry

SCHOOL OF ENERGY AND MATERIAL SCIENCE [GUINDY CAMPUS]

M.Sc. : Environmental Chemistry

SCHOOL OF BASIC MEDICAL SCIENCES [TARAMANI CAMPUS]

M.Sc. : Biochemistry, Biomedical Genetics, Environmental Toxicology
M.Phil : Genetics, Endocrinology

P.G. EXTENSION CENTRE, VELLORE

M.Sc. : Zoology
M.Phil : Economics, Zoology

FACULTY OF MEDICINE [TARAMANI CAMPUS]
[NOT COVERED UNDER CREDIT BASED SEMESTER SYSTEM] : 3 YEAR COURSE]

M.Sc. Anatomy
M.Sc. Microbiology
M.Sc. Physiology

MODE OF SELECTION

Masters Courses : Admission to Master courses will be based ONLY on Entrance Examination Marks. The entrance examination conducted by respective departments will be of two hour duration with "objective type" questions for a maximum of 100 marks. The candidate has to take the entrance examination in the respective subject for which the admission is sought (or) as per the instruction of the concerned Head of the Department.

Master of Philosophy Courses : There will be an Entrance examination for admission to M.Phil (Full-time) Degree courses conducted by the respective University Departments and the candidates will have to take the examination only in the subject for which he/she has applied for admission and not in the qualifying subject. The Entrance Test will be for 50 marks. The other 50 marks is for the qualifying examination.

PLACE, DATE AND TIME OF ENTRANCE EXAMINATION

The entrance examination will be held during July/August 1999.

The Heads of the Departments will issue Hall Tickets indicating the place, date and time of entrance examinations. Those candidates who have not received Hall Tickets in time due to Postal Delay etc, have to contact the Heads of the Departments concerned for getting necessary permission to take Entrance Examination.

ISSUE OF APPLICATIONS

Application and Prospectus can be had in person from the Office of the Registrar, University of Madras, Chennai-600 005 on payment of CASH or by a DEMAND DRAFT (Drawn in favour of The Registrar, University of Madras, Chennai-5) for Rs. 200/- for M.A./M.Sc./M.Com./M.Phil. courses.

Those who want to obtain application and the Prospectus by Post can send a written requisition with a DEMAND DRAFT (Drawn in favour of The Registrar, University of Madras, Chennai-5) for Rs. 250/- for M.A./M.Sc./M.Com./M.Phil courses [Rs. 200/- for application and Rs. 50/- for Postal Expenses]. The requisition for application should be accompanied by a self addressed cover as mentioned below :

For M.A./M.Sc./M.Com/M.Phil Courses	:	Self addressed cover size : 30 x 28 Cms
For Faculty of Medicine Courses	:	Self addressed cover size : 28 x 13 cms

1. Commencement of Issue of Application form and Prospectus : 21.06.1999
2. Last date for issue of application form : 05.07.1999
3. Last date for submission of filled-in-Application form : 09.07.1999

Separate application should be submitted for each course. Filled-in Application forms for admission along with required attested copies of certificates should be sent directly to the Heads of the University Departments concerned, (please refer the Prospectus) so as to reach them before the expiry of the last date prescribed. **Applications should not be sent to the Registrar, University of Madras.** The University reserves the right to suspend the conduct of any course, if the circumstances so warrant.

University Buildings
Chepauk, Chennai-600 005

REGISTRAR I/c

CLASSIFIED ADVERTISEMENTS

MULA EDUCATION SOCIETY, SONAI

Tal. Newasa, Dist. Ahmednagar

WANTED

Mula Education Society, Sonai invites an application for the following posts in Arts, Commerce & Science College, Sonai and Shri Dnyaneshwar Mahavidyalaya, Newasa.

Sr. No.	Lecturer in	Total No. of Posts	
		F.T.	P.T.
1	Chemistry	1 SC	1ST
2.	English	1 SC	—
3.	Hindi	1 SC	—

Qualification :

1 Master's Degree with 55% marks or equivalent grade with good academic record.

2. Candidates should have passed N.E.T. or S.E.T. Examination.

3. Pay Scale and other Service Conditions As per rules of University of Pune and State Government.

4. Candidates should send a copy of their applications (without enclosing testimonials) to Dy Registrar, Reservations Cell, University of Pune, Pune-7.

5 Prescribed application forms are available in the Mula Education Society's office at Sonai. Please send Rs. 3 Stamp and self addressed envelope along with Rs. 15/- D.D. or cash or postal order, addressed to the Secretary, Mula Education Society, Sonai.

6 Application should reach to the Society's Office **within 15 days** from the date of publishing this advt.

Yashwantrao Gadakh Patil (M.L.C.)
PRESIDENT

TAMIL NADU VETERINARY AND ANIMAL SCIENCES UNIVERSITY

CHENNAI-600 051

ADVERTISEMENT NO. 4/99

Applications are invited in the prescribed form for the following posts in the University.

FACULTY OF VETERINARY AND ANIMAL SCIENCES/FISHERIES SCIENCES AND BASIC SCIENCES :

A) **Professor** : 9 Posts.

1. Animal Nutrition — 1 post (Open)
2. Clinics — 1 post (Open)
(Candidates with basic degree of B.V.Sc with Masters and Doctorate Degree in Surgery, Clinical Medicine and Therapeutics and Obstetrics and Gynaecology can apply.)
3. Clinical Medicine and Therapeutics — 1 post (Open)
4. Livestock Production and Management — 1 post (Open)
5. Meats Science and Technology — 1 (Open)
6. Obstetrics and Gynaecology — 1 (Open)
7. Pathology — 1 post (Open)
8. Animal Husbandry Economics — 1 post (Open)
9. Fishing Technology and Fisheries Engineering — 1 post (Open)

B) **Associate Professor** : 18 Posts

1 Animal Nutrition — 1 post (Open)
2. Clinics — 2 posts (Open)
(Candidates with basic degree of B V.Sc with Masters and Doctorate Degree in Surgery, Clinical Medicine and Therapeutics and Obstetrics and Gynaecology can apply.)
3. Dairy Science — 2 posts (Open)
4. Livestock Production and Management — 1 post (Open)
5. Obstetrics and Gynaecology — 1 post (Open)
6. Pathology — 1 post (Open)
7. Parasitology — 1 post (Open)
8. Physiology and Biochemistry — 1 post (Open)
9. Preventive Medicine — 1 post (Open)
10. Surgery — 1 post (Open)
11. Directorate of Centre for Animal Production Studies — 1 post (Open)
(Candidates with basic degree of B.V Sc with Masters and Doctorate Degree in Animal Genetics and Breeding, Animal Nutrition, Dairy Science, Poultry Science, Meat Science and Technology and Livestock Production and Management can apply.)
12 Animal Husbandry Economics — 1 post (Open)
13 Fishing Technology and Fisheries Engineering — 1 post (Open)
14. Fisheries Economics — 1 post (Open)
15. Fish Processing Technology (Microbiology Unit) — 1 post (Open)
16. Veterinary University Training and Research Centre, Thanjavur (Fisheries Unit) — 1 post (Open)

C) **Assistant Professor** : 33 Posts

1. Anatomy — 1 post (MBC/DC)
2. Animal Genetics and Breeding — 3 posts (OC, BC, SC)
3. Animal Husbandry Extension — 4 posts (OC, BC, SC, BC)
4. Livestock Production and Management — 2 posts (MBC/DC, OC)
5. Meats Science and Technology — 1 post (BC)
6. Parasitology — 2 posts (MBC/DC, OC)
7. Pathology — 1 post (MBC/OC)
8. Pharmacology — 2 posts (OC, BC)
9. Physiology and Biochemistry — 2 posts (MBC/DC, OC)
10. Poultry Science — 2 posts (MBC/DC, OC)
11. Directorate of Clinics — 5 posts (BC, SC, BC, OC, MBC/OC)
(Candidates with basic degree of B.V.Sc with Masters degree in Clinical subjects viz. Clinical Medicine and Therapeutics, Surgery and Obstetrics and Gynaecology can apply.)
12. Directorate of Centre for Animal Production Studies — 1 post (BC)
(Candidates with basic degree of B.V.Sc. with Masters degree in the subjects of Animal Genetics and Breeding, Animal Nutrition, Dairy Science, Poultry Science, Meat Science and Technology and Livestock Production and Management can apply.)
13. Directorate of Centre for Animal Health Studies — 5 posts (OC, BC SC, BC, OC)
(Candidates with basic degree of B.V.Sc. with Masters degree in the subjects of Parasitology, Veterinary Microbiology, Pathology and Preventive Medicine can apply.)
14. Directorate of Extension Education — 1 post (MBC/DC)
(Common to all with M.V.Sc. or M.Sc. degree in any of the subjects of Veterinary/Basic Sciences Faculties with basic degree of B.V.Sc.)
15. Animal Husbandry Economics — 1 post (OC)

D) **Physical Directress** : 1 Post (OC)

Scales of Pay :

Professor : Rs. 4500-150-5700-200-7300/-

Associate Professor : Rs. 3700-125-4950-150-5700/-

Assistant Professor : Rs. 2200-75-2800-100-4000/-

Physical Directress : Rs. 2200-75-2800-100-4000/-

Qualification :

A) **Professor :**

Ph.D. Degree with ten years of experience in teaching/research in the concerned subject.

B) **Associate Professor :**

Ph.D. Degree with five years of experience in teaching/research in the concerned subject.

C) **Assistant Professor :**

Masters Degree in the relevant subject with atleast 55% of marks or its equivalent grade and good academic records. A minimum OGPA of 3.50/4.00 or 8.00//10.00 or its equivalent is essential.

D) **Physical Directress :**

a) Master Degree in Physical Education
(or)
Masters Degree in Arts or Science with P.G. Diploma in Physical Education.

b) Experience as Physical Directress in University or College or Higher Secondary School for a period not less than 3 years.

c) Higher qualification including NCC training shall be preferred.

d) Passing of NATIONAL ELIGBILITY TEST (NET) conducted by the UGC or any other agency approved by the UGC is mandatory for the post.

For all the posts except Physical Directress, Basic Degree of B.V.Sc./B.F.Sc. recognised by this University is required.

For Sl. Nos. A(9), B(13), B(14), B(15) and B(16) Fisheries candidates who were in service in Tamilnadu Veterinary and Animal Sciences University prior to 3.11.89 and do not possess basic degree of B.F.Sc. can also apply.

Application form and instructions to candidates can be had from the Registrar, Tamilnadu Veterinary and Animal Sciences University, Madhavaram Milk Colony, Chennai-51 by sending a crossed Demand Draft for Rs. 50/- drawn in favour of "The Finance Officer, Tamilnadu Veterinary and Animal Sciences University, Chennai-51" at any nationalised bank with self addressed envelope (31 cm x 13 cm) bearing postage stamp to the value of Rs. 12/-. The Demand Draft should be dated not earlier than 18.6.99. Completed applications should reach the Registrar, Tamilnadu Veterinary and Animal Sciences University, Madhavaram Milk Colony, Chennai-51 **before 5.00 p.m. on 2.8.99.** The SC/ST candidates are exempted from payment of application fee on production of proper evidence.

For the posts of Assistant Professor/Physical Directress only those who are willing to serve the University for not less than a minimum period of three years need apply. The candidates selected for the posts of Assistant Professors/Physical Directress by this University should execute a bond to serve the University for a minimum period of three years failing which he/she should pay a sum of Rs. 30,000/- (Rupees thirty thousand only). The bond should be executed before joining duty.

Cut off date for all qualifications is **2.8.99.** Proofs should be enclosed with the application.

Dated : 17.6.99
Place : Chennai-51 **REGISTRAR**

PUNJABI UNIVERSITY
PATIALA

WALK IN INTERVIEW

On **30th June 1999** at 11.00 A.M. in the office of the Vice-Chancellor, Punjabi University Campus, Rajpura-Patiala Road, Patiala for teaching posts and on **1st July 1999** at 11 A.M. in the office of the Registrar, Punjabi University Campus for non-teaching posts for Punjabi University Regional Centre of Computer Education, Jaito (Faridkot). Candidates should bring their complete biodata with original Certificates.

Teaching :

a) **Lecturer (Computer Science & Engineering) — 2**
Grade and qualifications as prescribed by the UGC/University. If eligible and suitable candidates for the post of Lecturer are not found available, appointment of System Analyst in the same grade with the following qualifications would be made.

Qualifications : B.Tech (CSE) OR B.Tech (Non-CSE) with experience in computing OR M.Sc. (Physical Sciences) with two years experience in computing OR M.Sc. (Physical Sciences). DCA with one year experience in computing or MCA.

Non-Teaching :

a) **Clerk (Data Entry) — 1**
Grade : 3120-5160

Qualifications :

1. Degree in any speciality with atleast 50% marks OR Postgraduate degree in any subject OR Postgraduate Diploma in Computer Education.
2. Atleast 6 months training in Computer Application/practical experience.
3. Atleast 40 W.P.M. speed in word processing & data entry in English language and 30 W.P.M. in Punjabi language. There will be a practical Test to assess the knowledge of the Candidates.

b) **Lab Attendant — 1**
Grade : 3120-5160

Qualifications : XII Class with Science or any other examination equivalent to XII class with Science;

OR

Matric with Science with 2 years experience in a Science Laboratory.

Preference will be given to those having some experience in Store keeping.

c) **Peon — 1**
Grade : 2520-4140 (with start of Rs. 2620/-.)

Qualifications : Eighth Class pass (with Punjabi)

Preference will be given to candidates possessing higher qualifications.

d) **Telephone Attendant — 1** (For Punjabi University Campus)
Grade : 2520-4140 (with start of Rs. 2620/-.)

Qualifications : At least Matriculate with one year experience as Telephone Attendant.

Note :

Candidate must have passed Punjabi in Matriculation Examination or passed Punjabi Prabodh or Punjabi Praveshika Examination. However, if suitable candidates with requisite qualifications in Punjabi are not available, the selected candidates shall have to pass any of these examinations within two years.

For any of the non-teaching posts minimum prescribed qualifiactions can be relaxed in the case of otherwise suitable candidates.

REGISTRAR

COMMUNICATION

Promoting Translation Studies

It is timely that the University Postgraduate College, Kakatiya University organized recently a conference on Translation Studies *University News* 37 (19) 10 May 1999 (Pp. 23, 24). Languages are the very foundation of culture. They have power of emotion-thought and evolution. The keynote address by Dr. Bhadriraju Krishna Murthy is highly commendable and thought provoking. All his suggestions need to be pursued with concerted efforts on the part of the lovers of language-literature and culture :

(1) Introduction of Translation Studies,
(2) Opening of Modern Languages Departments,
(3) Creation of Translation Cells in government departments and commercial establishments throughout the country,
(4) Creating an apex national institution to train professional translators, and
(5) Study of native languages, promotion of translation studies and regional literatures.

Globalization, vocationali-sation, and Science education have taken away most of the youths from the study of native languages. And many of them are on the verge of extinction! This will lead to dehumanisation of the modern societies. Hence if man wants to be/remain cultured, it is essential that what Dr. Krishna Murthy has suggested, is made into a reality. The educationists, cultural activists, linguists, translators, universities, University Grants Commission, all have to give serious thought to it, and to see that these suggestions are implemented at the earliest, to save humanity, humanism, culture.

Anandan, N.N.
Centre of Cultural Studies & Research,
32/417, Alleppey-688 003 Kerala

THAPAR INSTITUTE OF ENGINEERING & TECHNOLOGY : PATIALA

(DEEMED UNIVERSITY)

ADMISSION NOTICE

ADMISSION TO 2ND YEAR/3RD SEMESTER OF BE PROGRAMME UNDER LATERAL ENTRY SCHEME FOR THE SESSION 1999-2000

Admission to 2nd year/3rd semester of BE Programme in Engineering disciplines of Chemical, Civil, Computer, Electrical, Electronics & Electrical Communication, Electronics (Instrumentation & Control), Industrial and Mechanical in this Institute for the Session 1999-2000 shall be based on the merit in the LEET-99 to be conducted by the Punjab Technical University, Jalandhar on July 18, 1999.

THE CANDIDATES DESIROUS OF SEEKING ADMISSION IN THIS INSTITUTE MUST NOTE THAT THEY HAVE TO SUBMIT A SEPARATE APPLICATION TO THIS INSTITUTE ON PRESCRIBED APPLICATION FORM.

85% seats are ear-marked for those candidates who have passed diploma in engineering in relevant discipline/branch from Punjab State Board of Technical Education and Industrial Training, Punjab or Sant Longowal Institute of Engineering and Technology (SLIET) with a minimum of 60% marks in aggregate or equivalent grade point in case of SLIET diploma. 15% seats are ear-marked for wards of Punjabis living outside Punjab (who will be required to produce a certificate of resident of Punjab State in terms of Punjab Government instructions issued from time to time), who have passed the diploma in the relevant branch from any recognised State Board of Technical Education in the country with a minimum of 60% marks in aggregate. The candidates seeking admission under this category (15%) should have passed Punjabi as a subject in the High School Examination.

The details of eligibility, number of seats, reservation of seats, fees etc. are given in the Information Brochure of the Institute which can be obtained from the Institute by paying Rs. 400/- on counter or can be asked for by registered post by sending a bank draft of Rs. 425/- payable at Patiala in favour of Registrar, Thapar Institute of Engineering & Technology, Patiala.

THE APPLICATION FORMS DULY COMPLETED IN ALL RESPECTS SHOULD REACH THE REGISTRAR, THAPAR INSTITUTE OF ENGINEERING & TECHNOLOGY, PATIALA-147004 ON OR BEFORE AUGUST 4, 1999 UPTO 5.00 P.M. THE CANDIDATES SHOULD COME FOR ADMISSION AND REGISTRATION TO THIS INSTITUTE ON AUGUST 5, 1999 AT 9.00 A.M. NO SEPARATE INTIMATION REGARDING ADMISSION WILL BE SENT.

REGISTRAR

VISITING SCHOLARS/FELLOWS — OPPORTUNITIES FOR POST-DOCTORAL WORK AT THE

Uttara Devi Resource Centre in Gender and Development (GENDEAVOUR)

M.S. Swaminathan Research Foundation, Chennai, India.

For scholars with strong interest in a combination of academic and development work, a doctoral degree in a relevant discipline and experience/specialisation in gender studies. For the period 1999-2001, priority is being given to the following areas : Gender and Biodiversity; Gender in Agricultural Studies; Gender in Livelihoods/ Environment. Period of four to eight months — by mutual understanding.

Responsibilities taken up may range from organising workshops, developing and running training courses to designing and initiating research, (including long-term collaboration) as well as interacting with staff, participating in ongoing academic activities, and monitoring/evaluating projects at M.S.S.R.F. which incorporate gender dimension as part of the mandate of the Resource Centre. Time and facilities to pursue own academic interests related to the frame of reference will be available.

Terms negotiable, facilities excellent, assignment challenging, with opportunities to travel and to interact with other institutions. However, for scholars now residing abroad, travel funds to and from India will have to be sought.

For Annual Reports of the Resource Centre of the M.S. Swaminathan Research Foundation, and other publications, see our website : www.mssrf.org

Contact : Mina Swaminathan at M.S. Swaminathan Research Foundation, 3rd Cross Street, Taramani Institutional Area, Taramani, Chennai-600 113, India. Ph. 091-044-2351229, 2351698 Fax : 091-044-2351319 E-mail : MDSAAA51@giasmd01.vsnl.net.in

INDIRA GANDHI AGRICULTURAL UNIVERSITY
KRISHAK NAGAR : RAIPUR-492 012

No. ACD-3/99-00/2780 **Dated 10.6.99**

ADMISSION NOTICE

Applications on prescribed form are invited for admission in various programmes for the Academic year 1999-2000 as under :

Programme	Subject		Minimum Admission requirements
M.Tech. (Agril. Engineering)			
	1. Farm Implements & Machines		B.Tech/B.Sc./B.E. in Agril. Engineering/Mechanical Engineering
	2. Soil Water Engineering & Management		B.Tech./B.Sc./B.E. in Agril. Engineering/Civil Engineering.
	3. Agricultural Processing & Food Engineering		B.Tech/B.Sc./B.E. in Agril. Engineering/Chemical Engineering/Dairy Technology.

A good Academic record with 6.00 O.G.P.A. out of 10.00 scale or 55% marks under marks system.

Programme	Subject		Minimum Admission requirements
M.Sc. (Ag.)			
	1. Agronomy	i.	B.Sc. (Ag.) degree under 10+2+4 system from a recognised University with 6.00 O.G.P.A. out of 10 point scale or 55% marks under marks system of examination or equivalent grade are eligible for M.Sc.(Ag.) & M.Sc. Programmes.
	2. Soil Science		
	3. Agril. Extension		
	4. Horticulture		
	5. Entomology		
	6. Plant Pathology		
	7. Agricultural Statistics		
	8. Plant Breeding & Genetics	ii.	In addition to above candidates having 60% marks or equivalent in :
	9. Plant Physiology		
	10. Agricultural Economics		
		(a)	B.Sc. (Biology)/B.Sc. (Forestry) are eligible for admission in M.Sc. (Agroforestry).
		(b)	B.Sc. in Forestry/Biochemistry/Microbiology/Sericulture/Veterinary/Dairy Technology are eligible for admission in M.Sc. Biotechnology.
M.Sc.			
	1. Agroforestry	(c)	B.Sc. Maths/Statistics are eligible for admission in M.Sc.(Ag.) Agricultural Statistics Programme.
	2. Biotechnology		
		(d)	Rs. 10,000/- (Rs. Ten thousand only) per semester will be charged in addition to the prescribed fees, for M.Sc. Bio-technology Programme.
Ph.D.			
	1. Agronomy		A good Academic record with O.G.P.A. 3.00/4.00, 6.50/10.00 or 60% marks under system in the relevant discipline at M.Sc.(Ag.) level.
	2. Soil Science		
	3. Plant Breeding & Genetics		
	4. Entomology		
	5. Plant Pathology		
M.V.Sc.			
	1. Animal Breeding & Genetics		B.V.Sc. degree under 10+2+5 system from a recognised University with 6.00 O.G.P.A. out of 10 point scale or equivalent grade.
	2. Animal Nutrition		
	3. Animal Production & Management		
	4. Veterinary Pathology		
	5. Veterinary Medicine		
	6. Veterinary Bio-chemistry		
	7. Veterinary Physiology		
	8. Veterinary Obstetrics & Gynaecology		

The prescribed application forms with detailed information can be obtained from the office of the Registrar, Indira Gandhi Agricultural University, Raipur on payment of Rs. 100/- (Rs. 25/- in case of Scheduled Caste and Scheduled Tribe candidate by sending attested copy of the cast certificate issued by the competent Authority) in shape of crossed Demand Draft in favour of "Indira Gandhi Agricultural University, Raipur" payable at Raipur alongwith self addressed 10 cm x 22 cm envelope.

Application form duly completed in all respects should reach the Registrar, Indira Gandhi Agricultural University, Krishak Nagar, Raipur-492 012 (MP) either by post or in person **on or before 10th September 1999** for M.Tech. (Agril. Engg.), **16th August 1999** for M.Sc.(Ag.)/M.Sc./Ph.D. Programme and **31st July 1999** for M.V.Sc. Programme.

Applications received after due date will not be entertained.

REGISTRAR

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